



**US Army Corps  
of Engineers**

HUNTSVILLE ENGINEERING  
SUPPORT CENTER

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Defense Environmental Restoration Program  
for  
Formerly Used Defense Sites

Ordnance and Explosives  
Chemical Warfare Materials

**ARCHIVES SEARCH REPORT  
FINDINGS**

**WATERTOWN AIR-TO-GROUND  
GUNNERY RANGE**

Marshall County, South Dakota

Project No. B08SD087201

AUGUST 1996

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Prepared by  
US ARMY CORPS OF ENGINEERS  
ST. LOUIS DISTRICT

ORDNANCE AND EXPLOSIVES  
CHEMICAL WARFARE MATERIALS  
ARCHIVES SEARCH REPORT  
FINDINGS  
WATERTOWN AIR-TO-GROUND GUNNERY RANGE  
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TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
<b>1.0 Introduction</b>	
1.1 Authority	1-1
1.2 Subject	1-1
1.3 Purpose	1-1
1.4 Scope	1-1
<b>2.0 Previous Investigations</b>	
2.1 Corps of Engineers Documents	2-1
2.2 Other Reports	2-1
<b>3.0 Site Description</b>	
3.1 Land Usage	3-1
3.2 Climatic Data	3-1
3.3 Geology and Soils	3-2
3.4 Hydrology	3-4
3.5 Ecology	3-4
3.6 Demographics	3-5
<b>4.0 Historical Ordnance Usage</b>	
4.1 Historical Site Summary	4-1
4.2 Review of Historical Records	4-2
4.3 Summary of Interviews	4-7
4.4 Air Photo Interpretation and Map Analysis	4-8
<b>5.0 Real Estate</b>	
5.1 Confirmed DoD Ownership	5-1
5.2 Potential DoD Ownership	5-1
5.3 Significant Past Ownership other than DoD	5-1
5.4 Present Ownership	5-1

<b>6.0</b>	<b>Site Inspection</b>	<b>6-1</b>	
<b>7.0</b>	<b>Evaluation of Ordnance Presence</b>	<b>7-1</b>	<b>2</b>
<b>8.0</b>	<b>Technical Data of Ordnance and Explosives</b>	<b>8-1</b>	
<b>9.0</b>	<b>Evaluation of Other Site Information</b>	<b>9-1</b>	

## **APPENDICES**

<b>A</b>	<b>REFERENCES</b>
<b>B</b>	<b>GLOSSARY AND ACRONYMS</b>
<b>C</b>	<b>TEXT/MANUALS</b>
<b>D</b>	<b>REPORTS/STUDIES</b>
<b>E</b>	<b>LETTERS/MEMORANDA/MISCELLANEOUS ITEMS</b>
<b>F</b>	<b>REAL ESTATE DOCUMENTS</b>
<b>G</b>	<b>NEWSPAPERS/JOURNALS - NOT USED</b>
<b>H</b>	<b>INTERVIEWS</b>
<b>I</b>	<b>PRESENT SITE PHOTOGRAPHS</b>
<b>J</b>	<b>HISTORICAL PHOTOGRAPHS - NOT USED</b>
<b>K</b>	<b>HISTORICAL MAPS/DRAWINGS - NOT USED</b>
<b>L</b>	<b>SITE SAFETY AND HEALTH PLAN/SITE INSPECTION REPORT</b>
<b>M</b>	<b>REPORT DISTRIBUTION LIST</b>

## **REPORT PLATES**

<b>Plate 1</b>	<b>Vicinity Map</b>
<b>Plate 2</b>	<b>Site Map</b>
<b>Plate 3</b>	<b>Findings</b>
<b>Plate 4</b>	<b>Aerial Photo - 1953</b>

## 1.0 Introduction

### 1.1 Authority

In 1986, Congress established the Defense Environmental Restoration Program at 10 U.S.C. 2701 et.seq. This program directed the Secretary of Defense to "carry out a program of environmental restoration at facilities under the jurisdiction of the Secretary."

In March, 1990, the EPA issued a revised National Contingency Plan. Under 40 C.F.R. 300.120, EPA designated DOD to be the removal response authority for incidents involving DoD military weapons and munitions under the jurisdiction, custody and control of DoD.

Since the beginning of this program, the U.S. Army Corps of Engineers has been the agency responsible for environmental restoration at Formerly-Used Defense Sites (FUDS). Since 1990, the U.S. Army Engineering and Support Center, Huntsville, has been the Mandatory Center of Expertise and Design Center for Ordnance and Explosives.

### 1.2 Subject

The former Watertown Air-to-Ground Gunnery Range was also known as Sisseton Range, Ft. Sisseton Precision Bombing Range and Watertown Gunnery Range. The site is located in Marshall County, approximately ten miles southeast of the town of Britton, South Dakota.

### 1.3 Purpose

This Archives Search Report (ASR) compiles information obtained through historical research at various archives and records holding facilities, interviews with persons associated with the site or its operations, and personal visits to the site. All efforts were directed towards determining possible use or disposal of ordnance on the site. Particular emphasis was placed on establishing the types, quantities and area(s) of disposal. Information obtained during this process was used in developing recommendations for further actions at the site.

### 1.4 Scope

The entire site of the former range, consisting of 7,312 acres, was evaluated in assessing the potential for OE contamination. It is designated as DERP-FUDS Project No. B08SD087201.

This report presents the history of the site, description and characterization of the immediate surrounding area, real estate ownership information, findings of a visual field survey, and OE site analysis, including an evaluation of potential ordnance contamination. A separate **Executive Summary** supplements these ASR FINDINGS and furnishes the CONCLUSIONS and RECOMMENDATIONS.



## 2.0 Previous Investigations

### 2.1 Corps of Engineers Documents

Under the Defense Environmental Restoration Program, the Omaha District prepared a Project Inventory Report (INPR), dated April 1994, which contained a Findings and Determination of Eligibility (FDE), for the subject Watertown Air-to-Ground Gunnery Range. The FDE states that the site was acquired in 1944 and was used in support of the Watertown Army Air Field. The site was determined to be eligible for the Defense Environmental Restoration Program for Formerly Used Defense Sites as established under 10 USC 2701 et seq. A RAC score of 4 was assigned. A copy of the INPR is included at Appendix D.

A Certificate of Clearance (COC), issued on 10 August 1950 states that the site had been cleared of all explosive materials reasonably possible to detect. A Copy of the COC is located at Appendix E.

### 2.2 Other Reports

No other site investigation reports were obtained during the archive search.

### **3.0 Site Description**

#### **3.1 Land Usage**

##### **3.1.1 Location**

The Watertown Air-to-Ground Gunnery Range, consisting of 7,312 acres, is located in Marshall County, 10 miles southeast of Britton, South Dakota. It is further identified as being located in Range 56 West, Sections 21, 22, 27, 28, 33, 34 of Township 126 North, and Sections 3, 4, 9, 10, 15, 16 of Township 125 North.

##### **3.1.2 Past Use**

Prior to DoD acquiring usage of the land, it was in private ownership and used mainly for rangeland.

##### **3.1.3 Current Uses**

The majority of the site is in private ownership and used for ranching and agricultural purposes. Approximately 480 acres are owned by the State of South Dakota and maintained as a state park.

#### **3.2 Climatic Data**

The site is located in a continental climate, with frequent daily temperature fluctuations and distinct seasons. Winters generally is cold and dry with storms of short duration. Normal temperatures for the season are in the middle teens and precipitation is mainly in the form of snow. Seasonal snowfall has varied from under 9 inches to over 75 inches. Blizzard type storms due occur on occasion but are infrequent. Average yearly snowfall is a little under 36 inches.

Spring is characterized by marked increases in both temperature and precipitation. Nearly one-third of the annual rainfall occurs during the spring months

Summers are hot but not extreme. Temperatures of 100 degrees or over usually occur three or four times a year, but nights are normally cool and comfortable. Summertime precipitation is mainly in the form of showers and thunderstorms. Hail occurs about 3 times a year on the average with the thunderstorms.

Autumn is a very pleasant season with mild warm days, cool nights, and plentiful sunshine.

The prevailing winds are south southeasterly every month except February. The winds are persistently strong most of the year, but highest in March, April and May and lowest in July and August.

At noon, the mean relative humidity is 70 percent in January, 54 percent in April, 53 percent in July, and 54 percent in October.

8

In Aberdeen, the sun shines for about 52 percent of the daylight hours in winter, and for more than 70 percent in summer. Skies are clear about 28 percent of the time, partly cloudy about 28 percent and cloudy about 44 percent.

Climatological data for the area are summarized in TABLE 3-1. Data were collected at the National Weather Service meteorological station at the Aberdeen Regional Airport. The site is located approximately 35 miles northeast of the Regional Airport.

**CLIMATOLOGICAL DATA FOR  
ABERDEEN, SOUTH DAKOTA  
TABLE 3-1**

Month	Temperature		Precipitation	Wind	
	Average Minimum (°F)	Average Maximum (°F)		Average Speed Miles/Hour	* Average Direction
January	-0.6	20.9	0.37	11.3	SSE
February	6.5	26.9	0.47	11.3	NW
March	19.8	39.8	1.34	12.5	SSE
April	33.0	57.3	1.95	13.0	SSE
May	44.5	69.7	2.41	12.4	SSE
June	54.3	78.8	3.15	10.5	SSE
July	59.6	85.9	2.75	9.5	SSE
August	56.8	84.4	2.13	10.2	SSE
September	46.1	72.9	1.86	10.6	SSE
October	34.2	60.4	1.12	11.1	SSE
November	19.9	40.5	0.59	10.9	SSE
December	5.3	25.4	0.41	10.7	SSE
Average	31.6	55.2	18.55	11.2	SSE

\* PREVAILING WIND DIRECTION BASED ON CLIMATOLOGICAL DATA  
AT HURON, SOUTH DAKOTA, 91 MILES SOUTH OF ABERDEEN

### 3.3 Geology and Soils

#### 3.3.1 Geology

Watertown Air-to-Ground Gunnery Range lies near the western boundary of the Western Lakes Section of the Central Lowland physiographic province. The western boundary is known as the Missouri Escarpment or the Coteau des Missouri. Lakes number in the thousands, and prominent end moraine, outwash plains and numerous kames and eskers are

dominant land features. Stream drainage is poorly developed but is more distinct in the rolling to steep areas on the outer edges where deeply entrenched waterways route water to lower-lying areas.

The Coteau des Missouri is a ridge of small hills with stagnant ice glacial features such as closely spaced knobs and marshy sloughs between them. The landscape is completely glacial in origin, formed as a result of a continuous sheet of stagnant, or dead ice developed characteristic glacial features such as dead ice moraines, collapsed-stream-sediment topography, collapsed-lake-sediment topography, ice-walled lake plains and associated disintegrated ridges and trenches.

The glacial deposits range in thickness from 1-800 feet. These glacial deposits are underlain by 800-900 feet of Cretaceous-age rocks, from upper to lower, the Pierre Shale, Niobrara Formation, a shaly marl or chalk, the Carlile Shale, the Greenhorn Formation, which is mostly composed limestone interbedded with limy shale, the Graneros Shale, a shale interbedded with silt and the Dakota Formation, which is a sandstone containing shale lenses. These Lower Cretaceous formations are directly underlain by PreCambrian basement granite which is usually weathered in the upper part.

### 3.3.2 Soils

Soils within the Watertown Air-to-Ground Gunnery Range vary from nearly level to steep, well-to-moderately well drained, silty, sandy, clays with organics, formed within glacial till or drift.

For soil considerations, the site can be roughly divided in half, with Mallard Lake being the dividing line.

The northern site soils formed on a glacial moraine locally known as the "Sisseton Hills". The more level areas' soils have a dark gray clay with organics underlain by a brown, silty clay with organics. These areas have a high capacity for water intake, and a high shrink-swell potential.

Areas of swales have a thick surface layer of dark gray clay with organics underlain by a transitional layer of calcareous, dark gray-brown and grayish-brown clay with organics. Below 8" is a calcareous light, brownish-gray and light gray clay. These soils also have a high water capacity, have moderately slow permeability and a moderate hazard of erosion due to runoff. Again, a high shrink-swell potential exists.

Soils on slopes have a thin surface layer of dark gray clay with organics that is underlain by a transitional layer of calcareous, dark grayish-brown and brownish-gray clays with organics. Hazard of erosion is moderate due to runoff. These soils have moderately slow permeability.

The soils on the southern half of the site formed within glacial drift. The soils on gently undulating to rolling areas have a surface of dark gray clay with organics; the upper subsoil is a dark gray and very dark grayish-brown clay with organics, the lower subsoil is a brown clay with organics. These are underlain by a clayey glacial till or clayey glacial drift.

The soils on more level areas have a surface of dark gray silty clay with organics; the upper subsoil is a dark gray and dark grayish-brown silty clay with organics, the lower subsoil is a pale brown, calcareous silty clay with organics. These are underlain by stratified silty and sandy clays with organics.

The available water capacity is high for these soils, permeability moderately slow and the shrink-swell potential is moderate. Soils on slopes are susceptible to erosion due to runoff.

Depth to freeze-line for northeastern South Dakota is 66".

### 3.4 Hydrology

#### 3.4.1 Ground Water

Glacial sand and gravel deposits form the most important water bearing units and can produce yields of 500 gpm. The major glacial aquifer underlying the site is the James aquifer. The James aquifer ranges in depth from about 100-580 feet below land surface. Water in the aquifer is under artesian pressure. The piezometric water surface ranges from 2-111 feet below land surface.

The Cretaceous Dakota aquifer also underlies the site at depths of 900-1500 feet. Water in the aquifer is under artesian pressure as well and in low-lying areas many wells flow.

#### 3.4.2 Surface Water

The Watertown ATG Gunnery Range site is drained by several natural lakes and depressions or prairie potholes. Runoff from the site generally flows to these lakes or potholes with no drainage outlet to a stream.

### 3.5 Ecology

The information on the endangered and threatened species for this site has been provided by the U.S. Fish and Wildlife Service (USFWS) and the South Dakota Department of Game, Fish and Parks (DGFP).

The following federally-listed species are expected to occur in Marshall County, South Dakota: American burying beetle (Nicrophorus americanus), endangered; piping plover (Charadrius melodius), threatened; peregrine falcon (Falco peregrinus), endangered; whooping crane (Grus americana), endangered; bald eagle (Haliaeetus leucocephalus),

threatened; interior least tern (Sterna antillarum), endangered; and western prairie fringed orchid (Platanthera praeclara), threatened.

The DGFP noted that the following species of state concern are known to occur in the vicinity of the Watertown ATG Gun Range: regal fritillary (Speyeria idalia), rare; and Powesheik skipper (Oarisma powesheik), rare.

No additional information on the occurrence of rare or endangered species or natural communities is known at this time. This does not mean that other state or federally-listed species may not be present within the areas of interest. An on site inspection by appropriate state and federal personnel may be necessary to verify the presence, absence, or location of listed species, or natural communities if remedial action is recommended as part of the final ASR.

### 3.6 Demographics

#### 3.6.1 Center of Activity

The Watertown Air-to-Ground Gunnery Range is located near the City of Britton, Marshall County, South Dakota.

#### 3.6.2 Population Density

CITY/COUNTY	CITY: Britton	COUNTY: Marshall
AREA (sq. mi.)	1.7	839
POPULATION	1,394	4,737
POP DENSITY	820 persons/sq.mi.	5.6 persons/sq.mi

#### 3.6.3 Types of Businesses and Industry

The number of business establishments in Marshall County can be broken down by type as follows: manufacturing 7.2.0%; agriculture 1.4%; trade 36.2%; services and financial 40%; and other 15.2%. Prominent employers in the County are trade and financial businesses at about 31.7%, services at 25.2%, manufacturing at 38%, and 1.4% unclassified. Foregoing percentages are at mid-March 1992.

#### 3.6.4 Types of Housing

Housing is composed of both single family and multi-family dwellings. The median value of 1,400 specified owner-occupied housing units in Marshall County is \$22,900.

### 3.6.5 New Development in the Area

Residential construction and additions to a "convenience mart" are the only new projects being undertaken in the area.

12

### 3.6.6 Typical Cross Sections of the Population:

Approximately 99.4% of the population of Britton City is White; 0% Black; 0.5% American Indian, Eskimo or Aleut; 0.1% Asian or Pacific Islander; and 0% other races. The percent of the total population (of any race) that is of Hispanic origin is 0%. The part of the population under the age of 18 is 26.8%, and the part over the age of 65 is 21.8%.

## **4.0 Historical Ordnance Usage**

### **4.1 Historical Site Summary**

In June 1942, the United States Army Air Corps selected the Municipal Airport in Watertown, SD, as a sub-base or satellite airfield for Sioux City Army Air Base, Iowa. Sioux City Army Air Base, home of the 15th Air Wing, came under the jurisdiction of the Second Air Force. The Watertown Army Airfield operated in conjunction with the units belonging to the Heavy Bombardment Air Base at Sioux City.

Watertown Army Airfield used several aircraft ranges for target practice, including the Watertown Air-to-Ground (ATG) Gunnery Range (Second Air Force 1943). In November 1942, the War Department authorized the acquisition of land for the Watertown ATG Gunnery Range, which eventually encompassed 7,312 acres, 2 miles by 6 miles in size. The Army Air Corps initially proposed the land be used for an air-to-ground gunnery range. Later, the Army Air Corps recanted and stated the ATG Range was "inadequate" in size for air-to-ground gunnery. The Second Air Force converted the site to a Precision Bombing Range. Yet, the Second Air Force continued to name the site, Watertown ATG Gunnery Range.

In 1943, the Army Corps of Engineers erected three towers on the southern end of the Range, southwest of the old historic buildings at Ft. Sisseton, for triangulation scoring of bombing practice. Observers reported hits and misses on targets. Bombing operations considerably disturbed the areas around the targets. Due to its location near a historic landmark, the Second Air Force also referred to the Watertown ATG Range as the Ft. Sisseton Precision Bombing Range (The Sisseton Courier 1944) (Headquarters, Army Air Base, Sioux City 1944). According to the Sisseton Courier, the Army Air Corps used the Watertown ATG Gunnery Range or Ft. Sisseton Precision Bombing Range for "over a year."

In May 1944, the Army Air Corps discontinued use of the Watertown ATG Range. A detail of soldiers hauled away material and equipment (Headquarters, Second Air Force 1945). Government-owned structures included one remaining observation tower (30 feet high), storage and generator room, and an observation room.

The War Department placed the Watertown ATG Gunnery Range in the category of surplus, effective 14 August 1945. The Second Air Force assigned Sioux City Army Air Base the responsibility for control, use, and maintenance of the Watertown ATG Gunnery Range pending final disposition.

In December 1945, Headquarters, Army Air Base, Sioux City issued a certificate for several ranges, including Ft. Sisseton, which states "a thorough search has been made...all duds, unexploded projectiles and bombs have been marked and disposed of..." (Office of the Commanding Officer 1945). The Federal Government canceled all leases for the site by June 1946.



In August 1950, the Army Corps of Engineers issued another certificate of clearance for decontamination of the site (Office of the Corps of Engineers 1950). Landowners are currently using the site for ranching and agricultural purposes. The State of South Dakota has also preserved a portion of the range as the Ft. Sisseton State Park.

14

#### 4.2 Review of Historical Records

**National Archives  
8th & Pennsylvania  
Washington, D.C. 20408  
(202) 501-5671**

Record Group 153 - Records of the Office of the Judge Advocate General (Army)

Entry: Reservation File, 1800-1950

Box 417; Subject: Watertown - Deeds, Leases, Descriptions of land (bases and ranges).

Record Group 160 - Records of the Headquarters Army Service Forces

Entry 27

Box 43 (information on the surplus of the Fort Sisseton Precision Bombing Range).

**National Archives at College Park  
8601 Adelphi Road  
College Park, MD 20740  
(301) 713-6800**

Record Group 18 - Records of the Army Air Forces

Entry: 1, Air Adjutant General, Mail & Records Division, Unclassified Records Section

Box 288; Subject: Decimal Files 1945, 684 to 686, Vol. 2 (information on the disposal of real estate for the Fort Sisseton Precision Bombing Range).

Entry: Air Adjutant General, Mail & Records Division, Unclassified Records Section  
Box 2248; Subject: Decimal Files June 1944 - 1946, 684, 1944 to 1945 (range inspection report for Watertown ATG Gunnery Range).

Entry: Air AG Central Decimal Files, 1942 - 1946

Box 869; Subject: Central Decimal Files, Oct 1942 - May 1944, 352.17

Box 1594; Subject: Central Decimal Files, Oct 1942 - May 1944, 600 Misc. (information on acquisition of land, organizational jurisdiction, and facilities for Watertown Army Air Field and its ranges).

Box 2300; Subject: Central Decimal Files, Jun 1945 (leased property inspection report for the Watertown ATG Gunnery Range, 1945).

**National Archives  
Suitland Reference Branch  
4205 Suitland Road  
Suitland, MD 20409  
(301) 457-7182**

The National Archives and Records Administration transferred all pertinent record groups to the National Archives in Washington, D.C. or the National Archives at College Park, MD.

**Washington National Records Center  
4205 Suitland Road  
Suitland, MD 20409  
(301) 457-7010**

The research team reviewed accession listings for RG 341 and RG 342 and did not find any pertinent information. Office box files were also checked for information.

**National Personnel Records Center  
Military Personnel Records  
9700 Page Avenue  
St. Louis, MO 63132-5100  
(314) 538-4085**

**Record Group 342 - Records of U.S. Air Force Commands, Activities, and Organizations  
Accession: 44-A-6003**

Box 29 of 53; Subject: Acquisition and real estate documents for Watertown (acquisition and request for clearance of sites, including Watertown ATG Gunnery Range for practice bombing, 1942).

Box 30 of 53; Subject: Acquisition of land and amendments for Watertown (information on acquisition of land for the Watertown ATG Gunnery Range).

Box 41 of 53; Subject: Correspondence on usage of sites (summary information on Second Air Force bases and ranges, 1943, includes Watertown; information on the excess, leasing for grazing purposes, and disposal of the Watertown ATG Gunnery Range, 1944 - 1946; information on renewal of leases for Watertown ATG Gunnery Range; information on the use and control of Watertown bombing and gunnery ranges).

Box 42 of 53; Subject: Correspondence on various 2nd Air Force sites (summary of base and range information for the Second Air Force, 1943).

Box 47 of 53; Subject: Watertown Ranges (report of excess leased land for the Fort Sisseton Range; surplus information on the Watertown ATG Gunnery Range).

**Accession: 46-A-3158**

Box 1 of 1; Subject: Building & Grounds, Purchase of Land Properties, Target Ranges (information on the Watertown ATG Gunnery Range, 1943).

**U.S. Air Force Historical Research Agency  
600 Chennault Circle  
Maxwell AFB, AL 36112-6424  
(334) 953-2447**

16

Record Group - Corps of Engineers, Base Units Material  
Entry: IRIS 02050146 thru 02050188  
Box: Waterloo - Watertown; Watertown Folders: 02050155 -02050188  
(information on the proposal for ATG gunnery range for Watertown AAF).

**U.S. Army Center of Military History  
1099 14th Street, N.W.  
Washington, D.C. 20005-3402  
(202) 761-5416**

The research team reviewed vertical and card files and did not find additional pertinent information.

**Historical Office  
U.S. Army Chemical-Biological Defense Command  
Building E5183  
Aberdeen Proving Ground, MD 21010-5423  
(410) 671-4430**

The research team reviewed the historical office files and did not find any additional pertinent information.

**National Archives-Rocky Mountain Region  
Building 48, Denver Federal Center  
Denver, CO 80225  
(303) 236-0817**

Record Group 121 - Records of the Public Buildings Service  
Entry: Construction Management Division, Denver,  
Box 34; Subject: Progress Photos and Final Photos, 1915-70, (Folder on Sisseton).

Record Group RG 270 - Records of the War Assets Administration  
Entry: Real Property Disposal Case Files, 1939-1962  
Box 95; Subject: Sioux Falls Army Airfield - Tremonton POW Sub-Camp  
(disposal information by War Assets Administration on the Watertown ATG  
Gunnery Range).  
Box 107; Subject: Vanadium Plant - Watertown Army Airfield (surplus  
documents and real property disposal case files on Watertown ATG Gunnery  
Range).

**Federal Records Center - Denver  
Building 48, Denver Federal Center  
P.O. Box 25307  
Denver, CO 80225  
(303) 236-0804**

The research team reviewed accession listings and Standard Forms 135 and did not find any pertinent information.

**National Archives-Central Plains Region  
2312 East Bannister Road  
Kansas City, MO 64131  
(816) 926-6272**

Record Group 270 - Records of the War Assets Administration  
Entry: Real Property Disposal Case Files, 1946-1950  
Box 351; Subject: South Dakota, Watertown Air-Ground Gunnery Range  
(certificate of clearance for Fort Sisseton).

**Federal Records Center-Kansas City  
2312 East Bannister Road  
Kansas City, MO 64131  
(816) 926-7271**

The research team reviewed available accessions at this repository and did not find any pertinent information.

**Cultural Heritage Center  
South Dakota State Historical Society  
900 Governors Drive  
Pierre, SD 57501-2217  
(605) 57501-2217**

The research team conducted a data search and copied a brief history of Watertown AAF from a publication entitled *South Dakota in World War II* by the World War II History Commission, SD.

**South Dakota State Library  
800 Governors Drive  
Pierre, SD 57501  
(605) 773-3131**

The research team conducted an extensive review of card catalog files, vertical files, aerial and ground photograph collections, map collection, and secondary resources and did not find any additional pertinent information.

**State Historic Preservation Office (SHPO)  
900 Governors Drive  
Pierre, SD 57501-2217  
(605) 773-3458**

18

The research team conducted a review of files and did not find any additional pertinent information. However, the SHPO did refer the research team to a number of other state organizations for research.

**South Dakota State University  
Day County Extension Office  
Box 540, Courthouse  
Webster, SD 57274  
(605) 345-4641**

The research team did not obtain hard copy documentation on any sites. However, several referrals were provided to obtain first-hand information on all sites connected with the Watertown Army Airfield.

**Center for Western Studies  
Augustana College  
P.O. Box 727  
Sioux Falls, SD 57197  
(605) 336-4007**

After coordination with the archivist at the Center for Western Studies, the Lead Historian sent by fax a letter with an enclosure describing all the team's sites. The Center did not have any information pertinent to the site.

**Watertown Regional Library  
611 B Avenue, N.E.  
Watertown, SD 57201-0250  
(605) 882-6226**

The research team consulted with the Chief Librarian and conducted a research of their special collections on the military in South Dakota. Essentially, data on family members who served in past wars was found. The research team did not find any pertinent information on any site.

**The Codington County Historical Society, Inc.  
27 First Avenue, S.E.  
Watertown, SD 57201  
(605) 886-7335**

The research team reviewed an aerials (1950s) of the Watertown Municipal Airport and received an number of referrals for interviews.

**State Museum, Fort Sisseton  
RR 2, Box 94  
Royal Lake State Park  
Lake City, SD 57247  
(605) 448-5701**

The research team obtained a collection of historical materials on land acquisition, use, and disposal information on the Watertown ATG Gunnery Range. The research team also obtained a list of referrals for interviews on the Watertown ATG and Precision Bombing Ranges. Norma Johnson, part-time Historian for the State Museum, provided historical materials, much of which had been obtained by her from the National Archives and other sources. She also provided us with a general sketch map of the Watertown ATG Range and a picture of a practice bomb said to have been retrieved at the site.

#### 4.3 Summary of Interviews

Interviews were conducted by telephone and in person, both prior to and during the site inspection. The primary purpose of these interviews was to make initial contact with individuals knowledgeable of the site and to coordinate follow-up visits during the site inspection phase of this ASR's preparation. A list of persons interviewed is included at Appendix H. Any pertinent information derived from these discussions is covered within the context of this report.

##### 4.3.1 Interview with Landowner

Art Borgan  
Rural Route 1, Box 86  
Dublin, SD 57270  
(605) 738-2480

Mr. Art Borgan, a landowner, one mile North of Fort Sisseton, was born in 1927 and raised in the area. During World War II, he recalls B series bombers (4 engines) flying over the Watertown ATG Gunnery Range and dropping 500 pound practice bombs (poundage is hearsay) that burst with sand and black powder smoke on soft ground, which made depressions 4 to 5 feet deep. Mr. Borgan knows the locations of where the practice bombs hit. He also recalls seeing practice bombs in the "bomb-bay" which were released early before their intended target. Mr. Borgan says the targets were square and rectangular sheets of wood painted white on stilts in random order built in the middle of pasture land. The targets were later burned and scrap metal has long since been cleared mostly by farmers.

#### 4.4 Air Photo Interpretation and Map Analysis

##### 4.4.1 Interpretation of Aerial Photography

20

Photoanalysis and land use interpretation were done using the following listed photography:

<u>Photography</u> <u>Date</u>	<u>Scale</u>	<u>Source</u>	<u>Identifier(s)</u> <u>Frame(s)</u>
18 AUG 1953	1:20,000	ASCS	147 Thru 150; 62 Thru 66; 25 Thru 28; 111 Thru 114
11 AUG 1958	1:20,000	ASCS	23 Thru 27; 62 Thru 65; 112 Thru 115
24 SEP 1965	1:20,000	ASCS	111 Thru 114; 261 Thru 264; 225 Thru 228
14 AUG 1991	1:40,000	USGS	13 Thru 16

The maps cited at paragraph 4.4.2 (below) were used as references for the photography.

Photography listed above covering the Watertown Air-to-Ground Gunnery Range was examined. All photos reviewed show the site in the post WWII era, after the area was declared clear of explosive ordnance. No ordnance and/or range related anomalies were noted.

Terrain at the site is hilly. Due to past glaciation, numerous lakes dot the area, causing an irregular drainage pattern. Land use is mostly agricultural. Population is sparse and limited to small farmsteads. Primary paved roads form an infrastructure supported by unpaved secondary roads and trails.

##### 4.4.2 Map Analysis

The site was analyzed using the following USGS 7.5 minute quadrangle map:

Twomile Lake, S. Dak. (1970)

Review of the above-cited map sheet confirms general descriptions found in paragraph 4.4.1 above. The map was also useful in locating boundaries and identifying features on the photography.

## 5.0 Real Estate

### 5.1 Confirmed DoD Ownership

The War Department acquired the site, consisting of 7,312 acres, by fee ownership, 280 acres, and lease, 7032 acres, in 1943 and 1944. Use of the site by the military ended when the land was declared surplus in August 1945 and all leases were cancelled by 30 June 1946.

Research revealed two clearance documents, a December 1946 certificate issued by Headquarters, Army Air Base, Sioux City, covered several ranges, including Ft. Sisseton. It states that a thorough search was made and all duds, unexploded projectiles and bombs were been marked and disposed of. Also, in August 1950, the Army Corps of Engineers issued a Certificate of Clearance (COC) for decontamination of the site stating that the area was given a visual inspection and cleared of all dangerous and/or explosive materials reasonably possible to detect. The land was recommended for any use for which the land is suited.

### 5.2 Potential DoD Ownership

No information indicating DoD ownership of any related lands other than those mentioned above was uncovered during the archive search.

### 5.3 Significant Past Ownership

There was no significant past ownership, other than DoD, that would have contributed to OE contamination.

### 5.4 Present Ownership

The majority of the site is currently in private ownership and used for ranching and agricultural purposes. Approximately 480 acres are owned by the State of South Dakota and preserved as the Fort Sisseton State Park. A complete list of owners is available at CEMRO.



## **6.0 Site Inspection**

The site inspection was conducted on 1 August 1996, by the following personnel of the St. Louis District:

Dennis W. Gilmore	Project Manager
Randy Fraser	Safety Specialist
Fred Miller	Historian

The site survey confirmed the presence of OE debris and related materials within the FUDS.

This former World War II air-to-ground gunnery range is situated in Township 125 North, Range 56 West, Sections 3, 4, 9, 10, 15, and 16, and extending north into Township 126 North, Range 56 West, Sections 21, 22, 27, 28, 33, and 34. The roughly two mile by six mile tract is hilly with numerous sloughs (shallow lakes). Land use is primarily agricultural. The site includes Fort Sisseton State Park.

The location of the former targets was not found in historical documents nor in the analysis of aerial photography. The INPR states that concrete foundations were constructed (observed on site visit) in the eastern half of Sections 9 and 16, Township 126 North, Range 56 West. These were believed to have supported observation towers. The INPR further provided that the majority of practice bomb remnants have been found in Section 9.

A copy of the Second Air Forces typical Air-to-Ground gunnery range layout (located in Appendix E) was obtained from historical records. Transposing this layout onto the site terrain, several other areas are identified as potential target locations. These areas were inspected by the team, and no observations of OE were made. These findings are consistent with historical documents which indicate that the site was not used as an air-to-ground range. However, .50 caliber rounds have been recovered from the site.

The execution of the site inspection was hindered by crops, tall grasses and the abnormally high water levels. The site is, and has been, inundated with exceptionally high water, reportedly for the past four years.

Three target footing were located; the layout of which suggests that the bombing target was located in the area south of Mallard Slough, centered on Sections 9 and 10. Landowners note that this is where they have recovered most of the practice bomb remnants. They further state that any practice bombs recovered in recent years have been retrieved from the bottom of the sloughs. Other items recovered include expended .50 caliber rounds and dummy rounds.

Photographs of the site are located in Appendix I.

## **7.0 Evaluation of Ordnance Presence**

Based on the extensive archive searches performed, the interviews with the owners and/or managers of this DERP-FUDS site, and observations made during the conduct of the site inspection, it is concluded that the probability of OE contamination, which would pose an explosive hazard, is negligible.

As stated in Section 6.0 - Site Inspection, OE was not observed on the site. None of the items observed in possession of the local resident presented an explosive hazard. All areas above the normal water level have been in cultivation, without incident, since the lands were transferred. No items other than practice bombs and expended .50 caliber rounds are known to have been recovered on the site. Any practice bomb remaining in the slough would pose no explosive hazard.

## **8.0 Technical Data of Ordnance and Explosives**

The Watertown Air-to-Ground Gunnery Range was apparently limited to .50 caliber and M38A2 Practice Bombs. Listed below are examples of the types of ammunition most likely to have been used. Data sheets for the listed ammunition are located in Appendix C.

Bomb, Practice, 100 Pound, M38A2

Cartridge, Armor Piercing, Caliber .50 Caliber, M2

## **9.0 Evaluation of Other Site Information**

No other environmental concerns relevant to DoD were discovered during the research or site visit.

# **APPENDIX A**

## **REFERENCES**

**ORDNANCE AND EXPLOSIVES  
CHEMICAL WARFARE MATERIALS  
ARCHIVES SEARCH REPORT  
FINDINGS  
WATERTOWN AIR-TO-GROUND GUNNERY RANGE  
Marshall County, South Dakota**

**Project Number B08SD087201**

**APPENDIX A -- REFERENCES**

**A.1 INPR Reference**

**U. S. Army Corps of Engineers**

1994 Inventory Project Report, Watertown Air-to-Ground Gunnery Range, Marshall County, SD, April 1994. Omaha District, Corps of Engineers, Omaha, NE.

**A.2 General References**

**Army Air Base**

1944 Letter, from the Commandant, Headquarters, 224th Combat Crew Training School, Army Air Base, Sioux City, IA, to Commanding General, Headquarters, Second Air Force, dated 5 June 1944, Subject: Report of Excess Leased Installations. Accession 342-44A-6003, Box 47 of 53. National Personnel Records Center, St. Louis, MO.

**Headquarters, Army Air Base**

1945 Letter, from the Commanding Officer, Headquarters, Army Air Base, Sioux City, IA, to Commanding General, Headquarters, Second Air Force, dated 4 June 1945, Subject: Disposal of Real Estate, Ft. Sisseton Precision Bombing Range. RG 18, Entry 1, Box 288, Folder--"684, Target and Bombing Ranges." Archives II, College Park, MD.

**Office of the Commanding Officer**

1945 Certificate, signed by the Commanding Officer, Headquarters, Army Air Base, Sioux City, IA, dated 18 December 1945, regarding Clearance of Fort Sisseton, Watertown Bombing and Air to Ground Gunnery Range. RG 270, Box 351, Folder--Air to Ground Gunnery Range. National Archives, Central Plains Region, Kansas City, MO.

**Office of the Corps of Engineers**

1950 Certificate of Clearance, signed by 1st LT Dick W. Argetsinger, Office, Chief of Engineers, dated 10 August 1950, regarding Watertown Air to Ground Gunnery Range (also known as the Fort Sisseton Precision Bombing Range and the Watertown Gunnery Range). Real Estate Files, Omaha District, U.S. Army Corps of Engineers. Omaha, NE.

### Second Air Force

- 1943 Report, Army Air Bases of the Second Air Force, First Edition, dated 1 September 1943, prepared by the Engineer Section, Second Air Forces, and the 910th Engineer Air Forces Headquarters Company. Accession 342-44A-6003, Box 42 of 53. National Personnel Records Center, St. Louis, MO.

### The Sisseton Courier

- 1944 Article, "Bombing Range at Ft. Sisseton Is Abandoned," in the newspaper, *The Sisseton Courier*, dated 18 May 1944. Files of the South Dakota Game, Fish, and Parks Administration. Ft. Sisseton, SD.

## A.3 References for Geology and Soils

### Downey, Joe S.

- 1986 *Geohydrology of Bedrock Aquifers in the Northern Great Plains in Parts of Montana, North Dakota, South Dakota, and Wyoming*. Regional Aquifer-System Analysis, U.S. Geological Survey Professional Paper 1402-E.

### Schultz, Loren D.

- 1975 *Soil Survey of Marshall County, South Dakota*, USDA, Soil Conservation Service, U.S. Department of the Interior, Bureau of Indian Affairs, South Dakota Agricultural Experiment Station.

### Koch, Neil C.

- 1975 *Geology and Water Resources of Marshall County South Dakota, Part I: Geology and Water Resources*. Bulletin 23, Department of Natural Resource Development, South Dakota Geological Survey.

## A.4 Demographic References

U.S. Census report as listed below:

- 1988 County and City Data Book, Land Area and Population, Marshall County, S.D.
- 1988 County and City Data Book, Land Area and Population, Britton, S.D.
- 1990 Census of Population and Housing, Marshall County, S.D.
- 1990 Census of Population and Housing Britton, S.D.
- 1991 County Business Patterns, Marshall County, S.D.

**APPENDIX B**  
**GLOSSARY AND ACRONYMS**



**ORDNANCE AND EXPLOSIVES  
CHEMICAL WARFARE MATERIALS  
ARCHIVES SEARCH REPORT  
FINDINGS  
WATERTOWN AIR-TO-GROUND GUNNERY RANGE  
Marshall County, South Dakota**

**Project Number B08SD087201**

**APPENDIX B -- GLOSSARY AND ACRONYMS**

AA	Anti-Aircraft
AAB	Army Air Base
AAF	Army Air Field
AD	Artillery District
AFB	Air Force Base
AGO	Adjutant General's Office
AP	Armor Piercing
APDS	Armor Piercing Discarding Sabot
APERS	Antipersonnel
APT	Armor Piercing with Tracer
ASR	Archives Search Report
ATG	Air-to-Ground
Aux	Auxiliary
BAR	Browning Automatic Rifle
BD	Base Detonating
BD/DR	Building Demolition/Debris Removal
BE	Base Ejection
BGR	Bombing and Gunnery Range
BLM	Bureau of Land Management
BRAC	Base Realignment And Closure
CAC	Coast Artillery Corps
CADD	Computer-Aided Design/Drafting
Cal	Caliber
CBDA	Chemical and Biological Defense Agency
CBDCOM	Chemical and Biological Defense Command
CE	Corps of Engineers
CEHND	Corps of Engineers, Huntsville Division
CELMS	Corps of Engineers, St. Louis
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CERFA	Community Environmental Response Facilitation Act
CESWA	Corps of Engineers, Albuquerque
CFR	Code of Federal Regulations
cfs	Cubic Feet Per Second
COC	Certificate of Clearance
COE	Chief of Engineers
COMP	Composition
CTG	Cartridge
CRF	Coincidence Range Finder

CSM	Chemical Surety Material
CSM	Command Sergeant Major
CWM	Chemical Warfare Material
CWO	Chief Warrant Officer
CWS	Chemical Warfare Service
DA	Department of the Army
DARCOM	Development and Readiness Command
DERA	Defense Environmental Restoration Account
DERP	Defense Environmental Restoration Program
DERP-FUDS	Defense Environmental Restoration Program- Formerly Used Defense Sites
DoD	Department of Defense
DOE	Department of Energy
DOI	Department of Interior
EE/CA	Engineering Evaluation/Cost Analysis
EIS	Environmental Impact Statement
EOD	Explosives Ordnance Disposal
EPA	Environmental Protection Agency
ERDA	Environmental Restoration Defense Account
ERTC	Engineer Replacement Training Center
FDE	Findings and Determination of Eligibility
FFMC	Federal Farm Mortgage Corporation
FLCH	Flechette
FS	Feasibility Study
FUDS	Formerly Used Defense Sites
GIS	Graphic Information System
gpm	Gallons per Minute
GSA	General Services Administration
HE	High Explosive
HEAT	High Explosive Anti-Tank
HEI	High Explosive Incendiary
HEP	Plastic
HE-S	Illuminating
HQ	Headquarters
HTRW	Hazardous Toxic and Radioactive Waste
HTW	Hazardous and Toxic Waste
IAS	Initial Assessment Study
INPR	Inventory Project Report
IRP	Installation Restoration Program
KAFB	Kirtland Air Force Base
MCX	Mandatory Center of Expertise
MG	Machine Gun
MG	Major General
mm	Millimeter
MT	Mechanical Time
MTSQ	Mechanical Time Super Quick
NARA	National Archives and Records Administration
NAS	Naval Air Station
NCDC	National Climatic Data Center
NCP	National Contingency Plan
NFS	National Forest Service
NG	National Guard
NGVD	National Geodetic Vertical Datum

NOAA	National Oceanic and Atmospheric Administration
NOFA	No Further Action
NPRC	National Personnel Records Center
NRC	National Records Center
OE	Ordnance and Explosives
OSHA	Occupational Safety and Health Act
OTU	Operational Training Unit
PA	Preliminary Assessment
PBR	Precision Bombing Range
PD	Point Detonating
PIBD	Point Initiating, Base Detonating
PL	Public Law
QASAS	Quality Assurance Specialist Ammunition Surveillance
RA	Removal Action
RAC	Risk Assessment Code
RD	Remedial Design
RG	Record Group
RI	Remedial Investigation
RI/FS	Remedial Investigation/Feasibility Study
SARA	Superfund Amendments and Reauthorization Act
SCS	Soil Conservation Service
SDGF&P	South Dakota Department of Game, Fish, and Parks
SLD	St. Louis District, Corps of Engineers
SSHO	Site Safety and Health Officer
SSHP	Site Safety and Health Plan
SWMU	Solid Waste Management Units
TECOM	Test Evaluation Command
TEU	Technical Escort Unit
TNT	Trinitrotoluene
TP	Target Practice
USA	United States of America
USACE	U.S. Army Corps of Engineers
USADACS	U.S. Army Defense Ammunition Center and School
USAED	U.S. Army Engineer District
USAEDH	U.S. Army Engineer Division, Huntsville, AL
USAF	United States Air Force
USATHMA	U.S. Army, Corps of Engineers, Toxic and Hazardous Materials Agency
USC	United States Code
USDA	U.S. Department of Army
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UXO	Unexploded Ordnance
WAA	War Assets Administration
WD	War Department
WNRC	Washington National Records Center

**APPENDIX C**  
**TEXT / MANUALS**

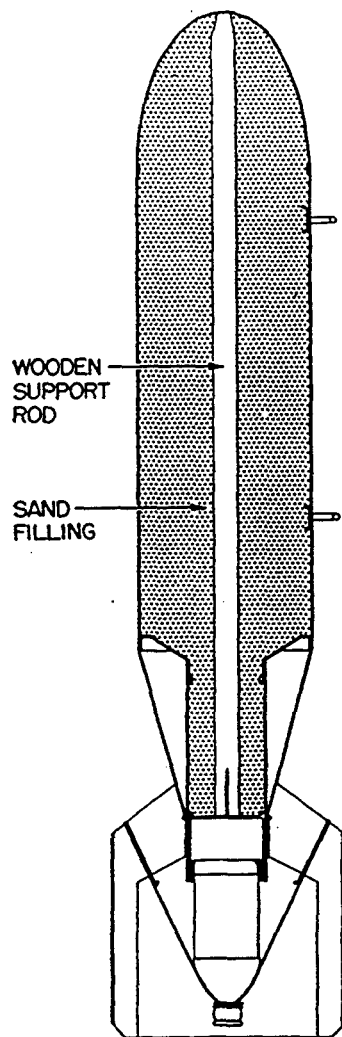
**ORDNANCE AND EXPLOSIVES  
CHEMICAL WARFARE MATERIALS  
ARCHIVES SEARCH REPORT  
FINDINGS  
WATERTOWN AIR-TO-GROUND GUNNERY RANGE  
Marshall County, South Dakota**

**Project Number B08SD087201**

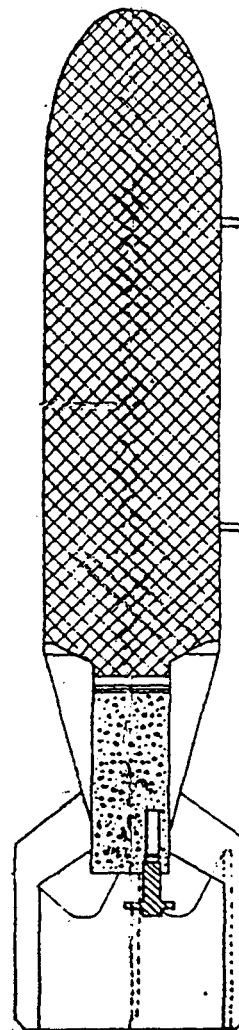
**APPENDIX C -- TEXT/MANUALS**

- C-1 Bomb, Practice, 100 Pound, M38A2
- C-2 Cartridge, Armor Piercing, Caliber .50 Caliber, M2

**BOMB, PRACTICE, 100 POUND, M38A2**



**With M4 spotting charge**



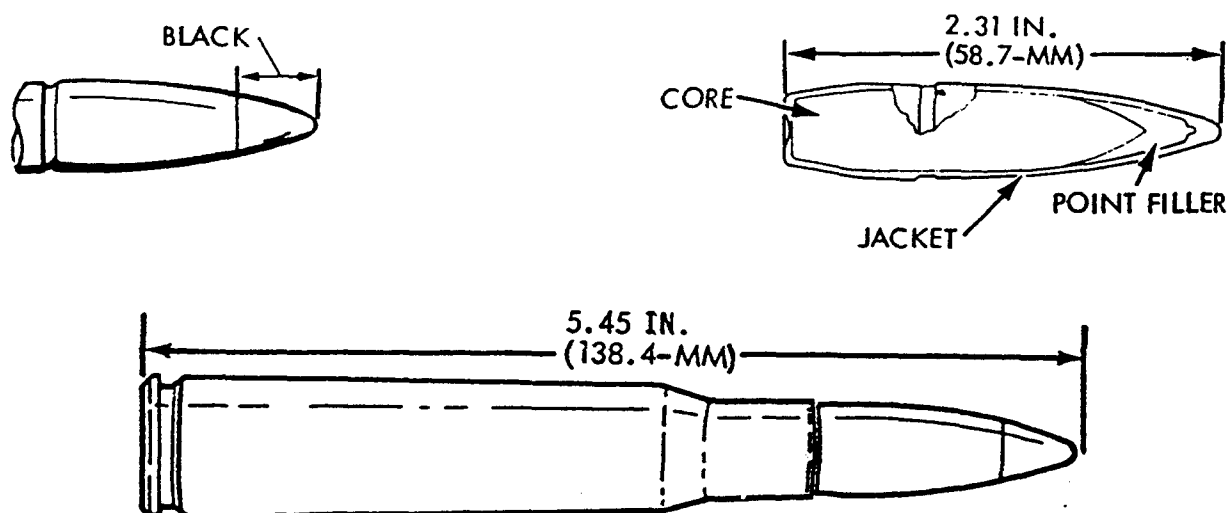
**With M3 spotting charge**

**Description:** The M38A2 practice bomb simulates a General Purpose (GP) bomb of the same size. The bomb is constructed of light sheet metal with box type fins welded to the bomb body. The spotting charge is either placed inside a receiver at the base of the bomb or, as with the M4 Spotting Charge, attached to the tail vanes.

<b>Length</b> .....	47.5 inches
<b>Diameter</b> .....	8.13 inches
<b>Weight, loaded</b> .....	100 pounds
<b>Filler</b> .....	Dry Sand
<b>Filler Weight</b> .....	80 pounds

<b>Reference</b> .....	OP 1664, May 47
	TM 9-1904, Mar 44
	Complete Round Chart #5981, Oct 44

## CARTRIDGE, ARMOR PIERCING, CALIBER .50, M2



**Description:** The armor piercing cartridge was standard issue for all .50 caliber machine guns during World War II. It is designed for use against armored aircraft, armored vehicles, concrete shelters, and similar targets. The cartridge is identified by the blackened tip of the bullet. It consists of a cartridge case, primer, propelling charge, and bullet. The bullet has a tungsten-chrome steel core with a point filler of lead encased inside a gilding metal jacket. The bullet can hit within 8 inches of a target at 500 yards and within 9 inches at 600 yards. The maximum range is 7200 yards.

<b>Length</b> .....	5.45 inches
<b>Weight</b> .....	1812 grains
<b>Propellant</b> .....	WC 860
<b>Propellant Weight</b> .....	235 grains
<b>Primer</b> .....	Percussion

<b>Reference</b> .....	TM 43-0001-27, Jun 81 TM 9-1904, Mar 44
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**APPENDIX D**  
**REPORTS / STUDIES**



**ORDNANCE AND EXPLOSIVES  
CHEMICAL WARFARE MATERIALS  
ARCHIVES SEARCH REPORT  
FINDINGS  
WATERTOWN AIR-TO-GROUND GUNNERY RANGE  
Marshall County, South Dakota**

**Project Number B08SD087201**

**APPENDIX D -- REPORTS/STUDIES**

- D-1 Inventory Project Report, Watertown Air-To-Ground Gunnery Range, 1994.  
U. S. Army Corps of Engineers, Omaha, NE.

MEMORANDUM FOR Commander, Missouri River Division, ATTN: CEMRD-MP

SUBJECT: DERP-FUDS Inventory Project Report for Site Number BO8SD087200, ~~44~~  
Watertown Air-to-Ground Gunnery Range, South Dakota

1. This Inventory Project Report (INPR) documents the DERP-FUDS preliminary assessment of the Watertown Air-to-Ground Gunnery Range. A site visit was conducted on 9 November 1993. The Site Survey Summary Sheet, site map, and real estate documents are at enclosure 1.
2. We determined that the site was formerly used by the Department of Defense. A recommended Findings and Determination of Eligibility is at enclosure 2.
3. We also determined there may be hazardous waste at the site eligible for cleanup under DERP-FUDS. The category of hazardous waste at the site is OEW. A Project Summary Sheet and Risk Assessment Code (RAC) for a potential OEW project are at enclosure 3.
4. I recommend that you:
  - a. Approve and sign the Findings and Determination of Eligibility; and,
  - b. Forward a copy of this INPR to CEHND for a determination of the need for further investigation for an OEW project and for the PA file.

3 Encls (trip)  
as

MICHAEL S. MEULENERS  
Colonel, Corps of Engineers  
Commanding

WAGNER/sm/7643

CF:

CEMRO-RE-PR (Perrigo)  
CEMRO-MD-HA (Dworkin)

LITTLE/CEMRO-ED-EC

SMART/CEMRO-ED-E

CARLOCK/CEMRO-ED-E

PLACK/CEMRO-MD-H

KELL/CEMRO-ED

HENNINGSON/CEMRO-OC

ROUMPH/CEMRO-DC

RUDLOFF/CEMRO-EX

COL MEULENERS/CEMRO-DE

**SITE SURVEY SUMMARY SHEET  
FOR  
DERP-FUDS SITE NO. B08SD087200  
WATERTOWN AIR-TO-GROUND GUNNERY RANGE  
MARSHALL COUNTY, SOUTH DAKOTA  
APRIL 1994**

40

SITE NAME: Watertown Air-to-Ground Gunnery Range; also known as Fort Sisseton Precision Bombing Range, Sisseton Range, and Watertown Gunnery Range.

LOCATION: Ten miles southeast of Britton, Marshall County, South Dakota; see site map attached.

SITE HISTORY: In 1944, the United States Government acquired a total of 7,312.00 acres of land for use as the Watertown Air-to-Ground Gunnery Range. Of this total, 40.00 acres were acquired by fee, 240 acres were acquired by Declaration of Taking, and 7,032.00 were acquired by leases from private landowners. This installation was acquired by the Army Air Forces as an air-to-ground gunnery range in support of the Watertown Satellite Air Field, South Dakota. On 14 August 1945, the War Department placed the Watertown Air-to-Ground Gunnery Range in the category of surplus and all leases were cancelled by 30 June 1946. A Certificate of Clearance was issued on 10 August 1950 stating that the Watertown Air-to-Ground Gunnery Range was given a visual inspection and was cleared of all explosive materials reasonably possible to detect. The area was recommended for any use for which the land was fit. Approximately 480 acres of the former air-to-ground gunnery range is now preserved by the State of South Dakota as the Fort Sisseton State Park while the remainder of the site is used primarily for ranching and agricultural purposes.

SITE VISIT: Mr. J.J. Yost and Ms. Stephanie Krager of EA Engineering, Science, and Technology, Inc., conducted a site visit of the former Watertown Air-to-Ground Gunnery Range on 9 November 1993.

CATEGORIES OF HAZARD: OEW.

PROJECT DESCRIPTIONS:

a. BD\DR. No further action. Real estate records do not indicate whether any improvements were constructed at the site during Department of Defense (DOD) use. The only remaining evidence of DOD use was the remnants of plowed-earth firebreaks, two concrete foundations, and several scattered small depressions in the surface topography presumed to be from past bombing activities. The plowed firebreak was located along the west part of Section 33 and Section 28, Township 126 North, Range 56 West. One of the current landowners indicated that the firebreak was approximately one mile long. The concrete foundations were located in the eastern half of Section 9 and Section 16, Township 125 North, Range 56 West. During the site visit, one foundation was observed to consist of steel supports (cut off just above the surface) encased in concrete while the other consisted of a concrete block only. Current landowners indicated that wood mock airplane targets and towers once existed on the site; however, the only remaining evidence of these was the foundations. Current DOD policy does not authorize removal of debris from private property. There is no evidence of unsafe debris resulting from DOD use of the site.

b. CON\HTW. No further action. Historical records do not indicate that underground and aboveground facilities or transformers were installed on the site. Landowners have not encountered any containerized waste nor was any observed during the site visit.

c. HTW. No further action. Records do not indicate that any hazardous or toxic waste facilities were constructed on the site. No evidence of waste disposal areas was noted in the real estate files, maps, conversations with current landowners, or during the site visit.

ENCL 1

d. OEW. Records indicate that the site is a former DOD air-to-ground gunnery range. During the site visit, current landowners reported that over the years they have found both the remains of metal bomb-shell fragments and small caliber shells throughout the area. Further investigation beyond the scope of this PA is proposed for CEHND.

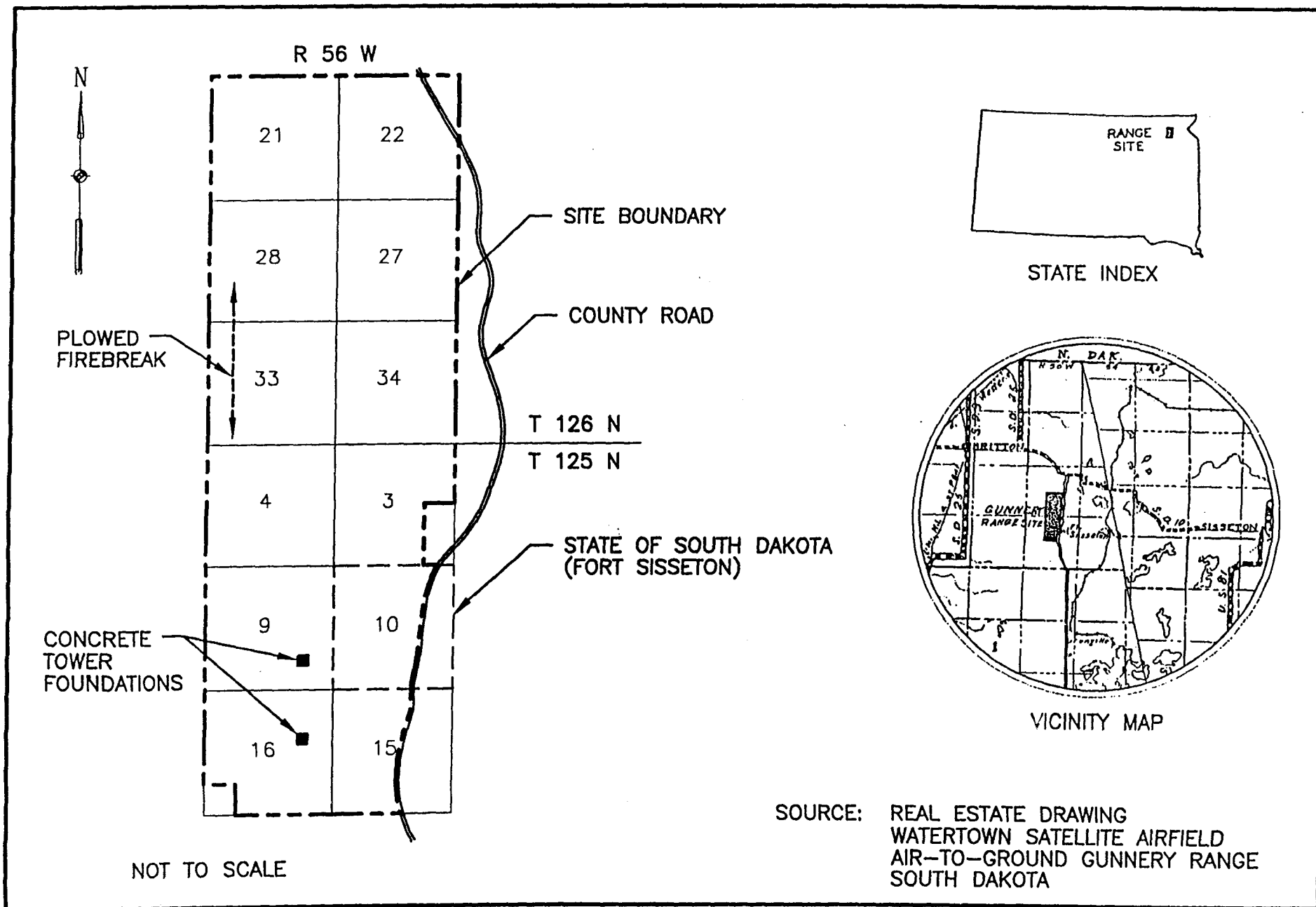
AVAILABLE STUDIES AND REPORTS: Omaha District, Real Estate Audit Files.

PA POC: Linda L. Wagner or Bruce K. Little, CEMRO-ED-EC, (402) 221-7643.

# SITE MAP

SITE NAME: WATERTOWN AIR-TO-GROUND GUNNERY RANGE

SITE NUMBER: BO8ND087200



**DEFENSE ENVIRONMENTAL RESTORATION PROGRAM  
FORMERLY USED DEFENSE SITES PROGRAM  
FINDINGS AND DETERMINATION OF ELIGIBILITY  
WATERTOWN AIR TO GROUND GUNNERY RANGE  
MARSHALL COUNTY, SOUTH DAKOTA  
SITE NO. BO8SD087200**

**FINDINGS OF FACT**

1. In 1944, the United States Government acquired a total of 7,312.00 acres of land for use as the Watertown Air-to-Ground Gunnery Range. Of this total, 40.00 acres were acquired by fee, 240.00 acres were acquired by Declaration of Taking, and 7,032.00 were acquired by leases from private landowners. A War Department Directive dated 23 November 1942, originally authorized acquisition of 7,380.00 acres of land for the air-to-ground gunnery range. A second Directive dated 22 February 1943, revised the area to include 7,400.00 acres of land. Eighty acres in Section 3 of the property was then deleted from the total, leaving 7,320.00 acres for use as the gunnery range site.
2. This installation was acquired by the Army Air Forces as an air-to-ground gunnery range in support of the Watertown Satellite Air Field, South Dakota. Real estate records do not indicate if any improvements were constructed on the site during Department of Defense (DOD) use.
3. On 14 August 1945, the War Department placed the Watertown Air-to-Ground Gunnery Range in the category of surplus and all leases were cancelled by 30 June 1946. According to the Corps of Engineers Real Property Management and Disposal Report dated 15 August 1947, the Omaha District was directed on 11 April 1946, to take custody of the property. However, the owned 280.00 acres had been transferred to the Federal Farm Mortgage Corporation (FFMC) on 7 March 1946, and all except three leases had already been cancelled. These remaining three leases were in the process of being cancelled as well. Therefore, the Corps of Engineers did not assume custody. A Certificate of Clearance issued on 10 August 1950 states that the Watertown Air-to-Ground Gunnery Range was given a visual inspection and was cleared of all explosive materials reasonably possible to detect. The area was recommended for any use for which the land was fit.

**DETERMINATION**

Based on the foregoing findings of fact, the site has been determined to be formerly used by the Department of Defense. Therefore, it is eligible for the Defense Environmental Restoration Program for Formerly Used Defense Sites, established under 10 U.S.C. 2701, et seq.

---

DATE

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JOHN E. SCHAUFELEBERGER  
Colonel, EN  
Commanding

ENCL 2

**PROJECT SUMMARY SHEET  
FOR  
DERP-FUDS OEW PROJECT NO. BO8SD087201  
WATERTOWN AIR-TO-GROUND GUNNERY RANGE  
MARSHALL COUNTY, SOUTH DAKOTA  
SITE NO. BO8SD087200  
APRIL 1994**

PROJECT DESCRIPTION: In 1944, the United States Government acquired a total of 7,312.00 acres of land for use as the Watertown Air-to-Ground Gunnery Range. This installation was acquired by the Army Air Forces as an air-to-ground gunnery range in support of the Watertown Satellite Air Field, South Dakota. During the site visit, current landowners reported that over the years they have found both the remains of metal bomb-shell fragments and small caliber shells throughout the area. According to these landowners, the majority of the bombs must have been dropped in the eastern half of Section 9, Township 125 North, Range 56 West because large numbers of metal bomb-shell fragments, associated craters, and the small caliber shells had been observed in this area. The only remaining evidence of existing or potential OEW-related contamination observed during the site visit, were several scattered small depressions in the topographic surface near the area identified as most heavily bombed. Two concrete foundations were observed in the eastern half of Section 9 and Section 16, Township 125 North, Range 56 West. One foundation was observed to consist of steel supports (cut off just above the surface) encased in concrete while the other consisted of a concrete block only. Current landowners indicated that wood mock airplane targets and towers once existed on the site; however, the only remaining evidence of these was the foundations. Approximately 480 acres of the former air-to-ground gunnery range is now preserved by the State of South Dakota as the Fort Sisseton State Park while the remainder of the site is used primarily for ranching and agricultural purposes.

PROJECT ELIGIBILITY: The site has been determined to have been formerly used by Department of Defense (DOD). Investigation of existing and potential OEW-related contamination associated with former DOD use of the site is eligible under DERP-FUDS.

POLICY CONSIDERATIONS: There are no policy considerations that prohibit the proposal of this project.

PROPOSED PROJECT: Further action beyond the scope of this PA is proposed for CEHND.

CERTIFICATES OF CLEARANCE: Attached.

RISK ASSESSMENT PROCEDURES FOR EXPLOSIVE ORDNANCE: A RAC for this site is attached.

DISTRICT POC: Linda L. Wagner or Bruce K. Little, CEMRO-ED-EC, (402)221-7643.

RISK ASSESSMENT PROCEDURES FOR  
ORDNANCE AND EXPLOSIVE WASTE (OEW) SITES

Site Name: <u>Watertown A-to-G Gun. Range</u>	Rater's Name: <u>S. Krager</u>
Site Location: <u>Marshall County, SD</u>	Phone No.: <u>(402) 476-3766</u>
DERP Project No.: <u>BO8SD087201</u>	Organization: <u>EA Engineering</u>
Date Completed: <u>9 November 1993</u>	RAC Score: <u>4</u>

OEW RISK ASSESSMENT:

This risk assessment procedure was developed in accordance with MIL-STD 882B and AR 385-10. The RAC score will be used by CEHND to prioritize the remedial action at Formerly Used Defense Sites. The OEW risk assessment should be based upon best available information resulting from records searches, reports of Explosive Ordnance Disposal (EOD) detachment actions, and field observations, interviews, and measurements. This information is used to assess the risk involved based upon the potential OEW hazards identified at the site. The risk agreement is composed of two factors, hazard severity and hazard probability. Personnel involved in visits to potential OEW sites should view the CEHND videotape entitled "A Life Threatening Encounter: OEW."

Part I. Hazard Severity. Hazard severity categories are defined to provide a qualitative measure of the worst credible mishap resulting from personnel exposure to various types and quantities of unexploded ordnance items.

TYPE OF ORDNANCE  
(Circle all values that apply)

A. Conventional Ordnance and Ammunition	VALUE
Medium/Large Caliber (20 mm and larger)	10
Bombs, Explosive	10
Grenades, Hand and Rifle, Explosive	10
Landmines, Explosive	10
Rockets, Guided Missiles, Explosive	10
Detonators, Blasting Caps, Fuses, Boosters, Bursters	6
Bombs, Practice (w/spotting charges)	6
Grenades, Practice (w/spotting charges)	4
Landmines, Practice (w/spotting charges)	4
Small Arms (.22 cal - .50 cal)	1
Conventional Ordnance and Ammunition (Select the largest single value)	6

What evidence do you have regarding conventional OEW? Real estate records state that the site was used as a gunnery range, but do not indicate the type of ammunition or ordnance used at the site. Landowners have reported seeing large numbers of metal bomb-shell fragments and some small caliber shells; however, none were observed during the site visit.



B. Pyrotechnics (For munitions not described above.)

	VALUE
Munition (Container) Containing White Phosphorus or other Pyrophoric Material (i.e., Spontaneously Flammable)	10
Munition Containing a Flame or Incendiary Material (i.e., Napalm, Triethylaluminum Metal Incendiaries)	6
Flares, Signals, Simulators	4
Pyrotechnics (Select the largest single value)	<u>0</u>
What evidence do you have regarding pyrotechnics?	<u>None.</u>

C. Bulk High Explosives (Not an integral part of conventional ordnance; uncontainerized.)

	VALUE
Primary or Initiating Explosives (Lead Styphnate, Lead Azide, Nitroglycerin, Mercury Azide, Mercury Fulminate, Tetracene, etc.)	10
Demolition Charges	10
Secondary Explosives (PETN, Compositions A, B, C, Tetryl, TNT, RDX, HMX, HBX, Black Powder, etc.)	8
Military Dynamite	6
Less Sensitive Explosives (Ammonium Nitrate, Explosive D, etc.)	3
High Explosives Value (Select the largest single value)	<u>0</u>
What evidence do you have regarding bulk explosives?	<u>None.</u>

D. Bulk Propellants (Not an integral part of rockets, guided missiles, or other conventional ordnance; uncontainerized)

	VALUE
Solid or Liquid Propellants	6
Propellants Value	<u>0</u>
What evidence do you have regarding bulk propellants?	<u>None.</u>

E. Radiological/Chemical Agent/Weapons

	VALUE
Toxic Chemical Agents (Choking, Nerve, Blood, Blister)	25
War Gas Identification Sets	20
Radiological	15
Riot Control and Miscellaneous (Vomiting, Tear, Incendiary and Smoke)	5
Radiological/Chemical Agent (Select the largest single value)	<u>0</u>
What evidence do you have of chemical/radiological OEW?	<u>None.</u>

Total Hazard Severity Value 6  
 (Sum of Largest Values for A through E -- Maximum of 61).  
 Apply this value to Table 1 to determine Hazard Severity Category.

TABLE 1

HAZARD SEVERITY\*

Description	Category	Hazard Severity Value
CATASTROPHIC	I	22 and greater
CRITICAL	II	11 to 21
MARGINAL	III	6 to 10
NEGLIGIBLE	IV	1 to 5
NONE**		0

\* Apply Hazard Severity Category to Table 3.

\*\* If Hazard Severity Value is 0, you do not need to complete Part II.  
 Proceed to Part III and use a RAC score of 5 to determine your appropriate action.

Part II. Hazard Probability. The probability that a hazard has been or will be created due to the presence and other rated factors of unexploded ordnance or explosive materials on a formerly used DOD site.

AREA, EXTENT, ACCESSIBILITY OF OEW HAZARD  
(Circle all values that apply)

A. Locations of OEW Hazards

	VALUE
On the surface	(5)
Within Tanks, Pipes, Vessels or Other confined locations.	4
Inside walls, ceilings, or other parts of Buildings or Structures.	3
Subsurface	(2)
Location (Select the single largest value)	<u>5</u>
What evidence do you have regarding location of OEW? <u>Current landowners indicated that they had seen bomb-shell fragments and small caliber shells on the surface. Craters left in the land surface from bombing activities were still evident during the site visit.</u>	

B. Distance to nearest inhabited locations or structures likely to be at risk from OEW hazard (roads, parks, playgrounds, and buildings).

	VALUE
Less than 1,250 feet	5
1,250 feet to 0.5 mile	4
0.5 mile to 1.0 mile	3
1.0 mile to 2.0 miles	(2)
Over 2.0 miles	1
Distance (Select the single largest value)	<u>2</u>
What are the nearest inhabited structures? <u>The closest inhabited structures, houses, appear to be located between one and two miles from the OEW hazard area.</u>	

C. Numbers of Buildings within a 2 mile radius measured from the OEW hazard area, not the installation boundary.

	VALUE
26 and over	5
16 to 25	4
11 to 15	(3)
6 to 10	2
1 to 5	1
0	0

Number of Buildings (Select the single largest value) 3

Narrative There are few inhabited buildings within two miles of the hazard area; however, Fort Sisseton State Park, with several buildings, is located within this area.

D. Types of Buildings (within a 2 mile radius)

	VALUE
Educational, Child Care, Residential, Hospitals, Hotels, Commercial, Shopping Centers	(5)
Industrial, Warehouse, etc.	4
Agricultural, Forestry, etc.	3
Detention, Correctional	2
No Buildings	0

Types of Buildings (Select the largest single value) 5

Describe types of buildings in the area. Houses, barns, and Fort Sisseton State Park are located within a two mile radius of the OEW hazard area.

E. Accessibility to site refers to access by humans to ordnance and explosive wastes. Use the following guidance:

Barrier	Value
No barrier or security system	5
Barrier is incomplete (e.g., in disrepair or does not completely surround the site). Barrier is intended to deny egress from the site, as for a barbed wire fence for grazing.	4
A barrier, (any kind of fence in good repair) but no separate means to control entry. Barrier is intended to deny access to the site.	3
Security guard, but not barrier	2
Isolated site	1
A 24-hour surveillance system (e.g., television monitoring or surveillance by guards or facility personnel) which continuously monitors and controls entry onto the facility; or An artificial or natural barrier (e.g., a fence combined with a cliff), which completely surrounds the facility; and a means to control entry, at all times, through the gates or other entrances to the facility (e.g., an attendant, television monitors, locked entrances, or controlled roadway access to the facility).	0
Accessibility (Select the single largest value)	5

Describe the site accessibility. Some areas around the hazard area are fenced, but some portions are open and accessible by foot or by vehicle.

F. Site Dynamics - This deals with site conditions that are subject to change in the future, but may be stable at the present. Examples would be excessive soil erosion by beaches or streams, increasing land development that could reduce distances from the site to inhabited areas or otherwise increase accessibility.

	VALUE
Expected	5
None Anticipated	0
Site Dynamics (Select largest value)	0

Describe the site dynamics. The majority of the site is privately-owned rangeland and the remainder is part of Fort Sisseton State Park, which is owned by the State of South Dakota. It is possible that the State land will be further developed in the future, but no development is anticipated on the rest of the site.

---

Total Hazard Probability Value  
(Sum of Largest Values for A through F--Maximum of 30) 20  
Apply this value to Hazard Probability Table 2 to determine  
Hazard Probability Level.

TABLE 2

HAZARD PROBABILITY\*

---

Description	Level	Hazard Probability Value
FREQUENT	A	28 or greater
PROBABLE	B	22 to 27
OCCASIONAL	C	16 to 21
REMOTE	D	9 to 15
IMPROBABLE	E	less than 9

---

\* Apply Hazard Probability Level to Table 3.

---

Part III. Risk Assessment. The risk assessment value for this site is determined using the following Table 3. Enter with the results of the hazard probability and hazard severity values.

TABLE 3

Probability Level		FREQUENT A	PROBABLE B	OCCASIONAL C	REMOTE D	IMPROBABLE E
Severity Category:						
CATASTROPHIC	I	1	1	2	3	4
CRITICAL	II	1	2	3	4	5
MARGINAL	III	2	3	4	4	5
NEGLIGIBLE	IV	3	4	4	5	5

RISK ASSESSMENT CODE (RAC)

- RAC 1 Expedite INPR, recommending further action by CEHND - Immediately call CEHND-ED-SY--commercial 205-955-4968 or DSN 645-4968.
- RAC 2 High priority on completion of INPR - Recommend further action by CEHND.
- RAC 3 Complete INPR - Recommend further action by CEHND.
- RAC 4 Complete INPR - Recommend further action by CEHND.
- RAC 5 Usually indicates that no further action (NOFA) is necessary. Submit NOFA and RAC to CEHND.

Part IV. Narrative. Summarize the documented evidence that supports this risk assessment. If no documented evidence was available, explain all the assumptions that you made.

Conversations with landowners and information contained in the real estate records indicate that an air-to-ground gunnery range was located on the site. Current landowners reported seeing (over the years) large numbers of metal bomb-shell fragments and some small caliber shells, but they had collected most of these and none were observed during the site visit. A number of craters (small earth depressions) were observed in the area which landowners indicated was most heavily bombed. Some of the site is fenced, but a large part is accessible by foot or vehicle.

## **APPENDIX E**

### **LETTERS / MEMORANDA / MISCELLANEOUS ITEMS**



**ORDNANCE AND EXPLOSIVES  
CHEMICAL WARFARE MATERIALS  
ARCHIVES SEARCH REPORT  
FINDINGS  
WATERTOWN AIR-TO-GROUND GUNNERY RANGE  
Marshall County, South Dakota**

**Project Number B08SD087201**

**APPENDIX E**

**LETTERS/MEMORANDA/MISCELLANEOUS ITEMS**

- E-1 Certificate of Clearance, dated 18 December 1945, stating that all duds, unexploded projectiles and bombs have been removed from the Watertown Air-to-Ground Gunnery Range.
- E-2 Certificate of Clearance, dated 10 August 1950, stating that Watertown Air-to-Ground Gunnery Range was inspected and cleared of all dangerous and/or explosive materials reasonably possible to detect.
- E-3 Headquarters Second Air Force letter with attached diagrams, dated 12 September 1942, describing layout of Air-to-Ground Gunnery Ranges.

HEADQUARTERS ARMY AIR BASE  
Office of the Commanding Officer  
Sioux City, Iowa

NARA 1 NC REGION  
RG 270 L1946-50  
Box 357  
H20 TOWN H-4 GUN E4E  
INA-SD-3

18 December 1945

C E R T I F I C A T E

This is to certify that a thorough search has been made of Cica  
Hollow Watertown Bombing Range, Fort Sisseton, Watertown Bombing and  
Air to Ground Gunnery Range, and Springfield Bombing Range and that  
all duds, unexploded projectiles and bombs have been marked and dis-  
posed of as indicated in paragraph two of AAF Letter 85-43, dated 4  
October 1945.

/s/ M. M. Munn  
M. M. MUNN  
Colonel, Air Corps  
Commanding


*This copy supplied to  
SPD Sec. by  
W/S Engrs. Office MD  
9-30-46  
EG*

602 Watertown Air to Ground  
Gunnery Range, South Dakota ENGLT

10 August 1950

CERTIFICATE OF CLEARANCE

All lands within the Watertown Air to Ground Gunnery Range (also known as the Fort Sisseton Precision Bombing Range and the Watertown Gunnery Range), located approximately 10 miles Southeast of Britton, South Dakota, consisting of approximately 7512.00 acres, have been given a visual inspection and have been cleared of all dangerous and/or explosive materials reasonably possible to detect. This area is recommended for any use for which the land is suited.

  
DICK W. ARGETSINGER  
1st Lt., CE  
Office, Chief of Engineers

Incl 4 -

APR C

RG 342

ENTRY: 46-②-3158

BOX: 107 1

FOLDER: "684 TARGET RANGES"

25 APR 96

684 (E-2)

MEM

HEADQUARTERS SECOND AIR FORCE  
Office of the Commanding General  
Fort George Wright, Washington

JAN 29 RECD

September 12, 1942.

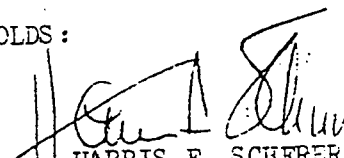
SUBJECT: Precision Bombing and Air-Ground Gunnery Ranges.

TO : See Distribution.

1. Each NBG and RCC station in the 15th, 16th and 17th Wings, including satellite fields, will establish immediately, one each precision bombing and air-ground gunnery range within the immediate vicinity of the airdrome. These facilities are furnished for the accomplishment of Paragraph 4, S.T.I. No. 12, this headquarters, dated September 8, 1942.
2. The bombing range will be a square area not less than two miles by two miles. It will be located, if practicable, in-line with the runway most frequently used. The desired distance from the end of the runway is that distance required for four-engine airplanes to gain an altitude of 6,000 feet above the target, plus one minute's level flight before bomb release line is reached. The target will be constructed with a 20 foot diameter disc for the bull's eye, one circle (solid line 3 feet wide) with a diameter of 100 feet and one circle (broken line 3 feet wide) with a diameter of 200 feet, bull's eye and circles to be made with some material that is in color contrast with the surrounding terrain. See Inclosure 1.
3. The air-ground gunnery range will be a rectangular area not less than two miles by six miles and suitable for low altitude (500 feet) firing. For the desired location with reference to the bombing target, see Inclosure 3. Ten airplane silhouettes, (Jap Zero), will be constructed and located in general, as shown in Inclosure 2.
4. The distances shown on Inclosure 3 are minimum only. Every effort should be made to follow the layout shown as far as local conditions permit. Terrain selected should be as flat as possible, consistent with other requirements such as using terrain to prevent ricochets from going beyond the limits of the range. When areas have been selected, Base Commanders will immediately notify this headquarters, giving complete legal description of the area involved. The Second Air Force Engineer will then initiate proceedings to acquire the necessary land.
5. Safety regulations should include the following: Minimum distance between airplanes on the gunnery range is seven miles.

6. Scoring of bombing will be by estimation.

By command of Major General OLDS:

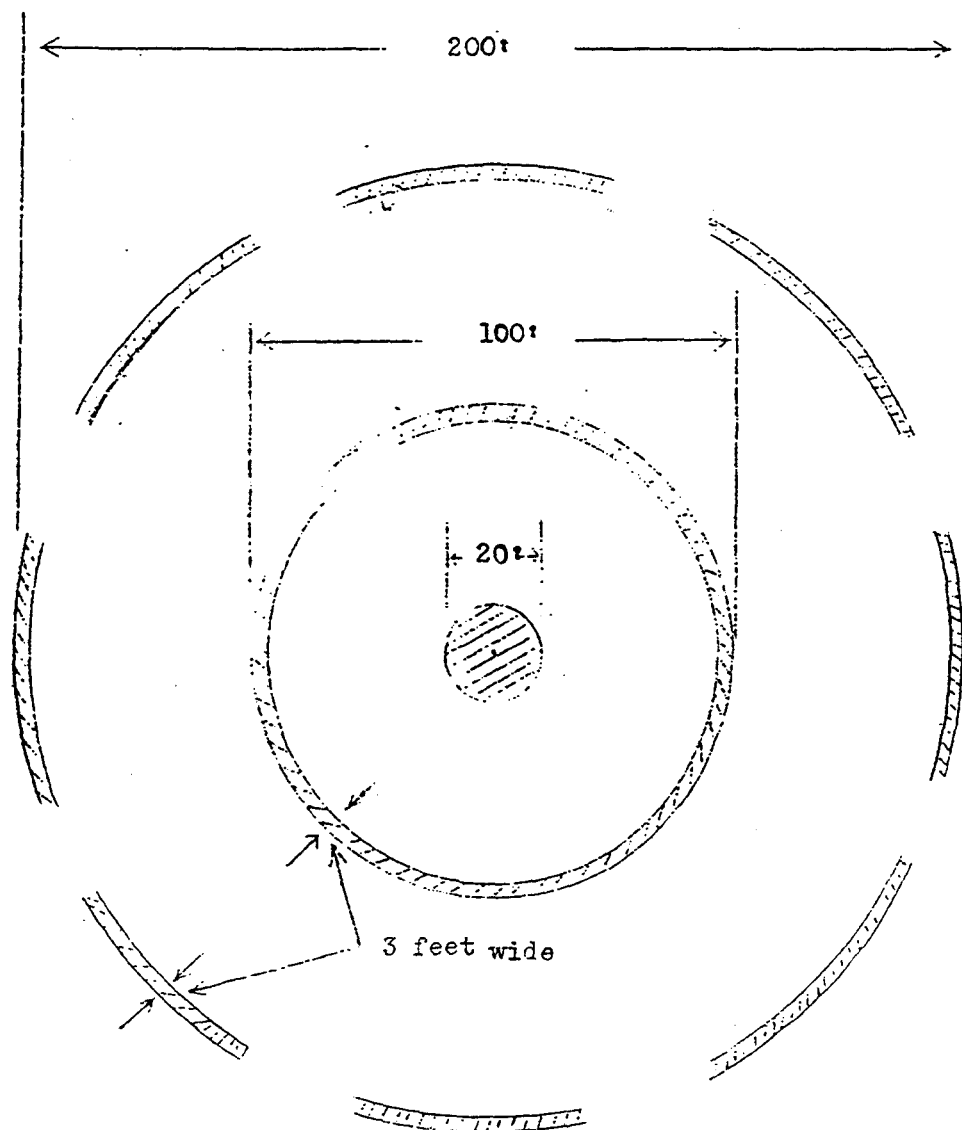
  
HARRIS F. SCHERER,  
Colonel, Adjutant General's Department  
Adjutant General.

3 Incls :-

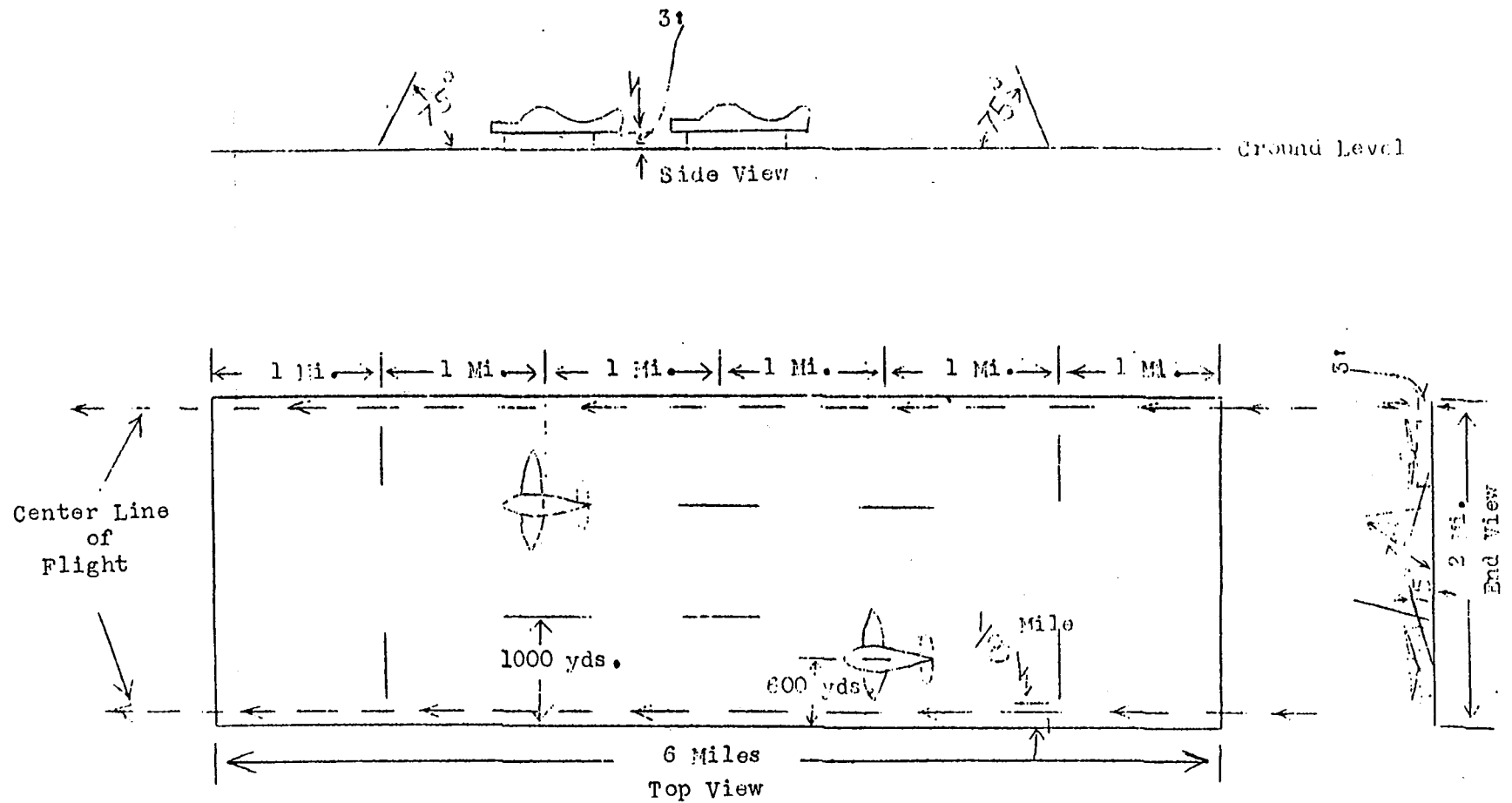
- #1 - Precision Bombing Target
- #2 - Air-Ground Gunnery Target
- #3 - Layout Plan. Precision Bombing  
& Air-Ground Gunnery Ranges

DISTRIBUTION "B": Plus Groups,  
(less GASCOMS, Fighter Command, and  
18th Repl Wing.)

PRECISION BOMBING TARGET

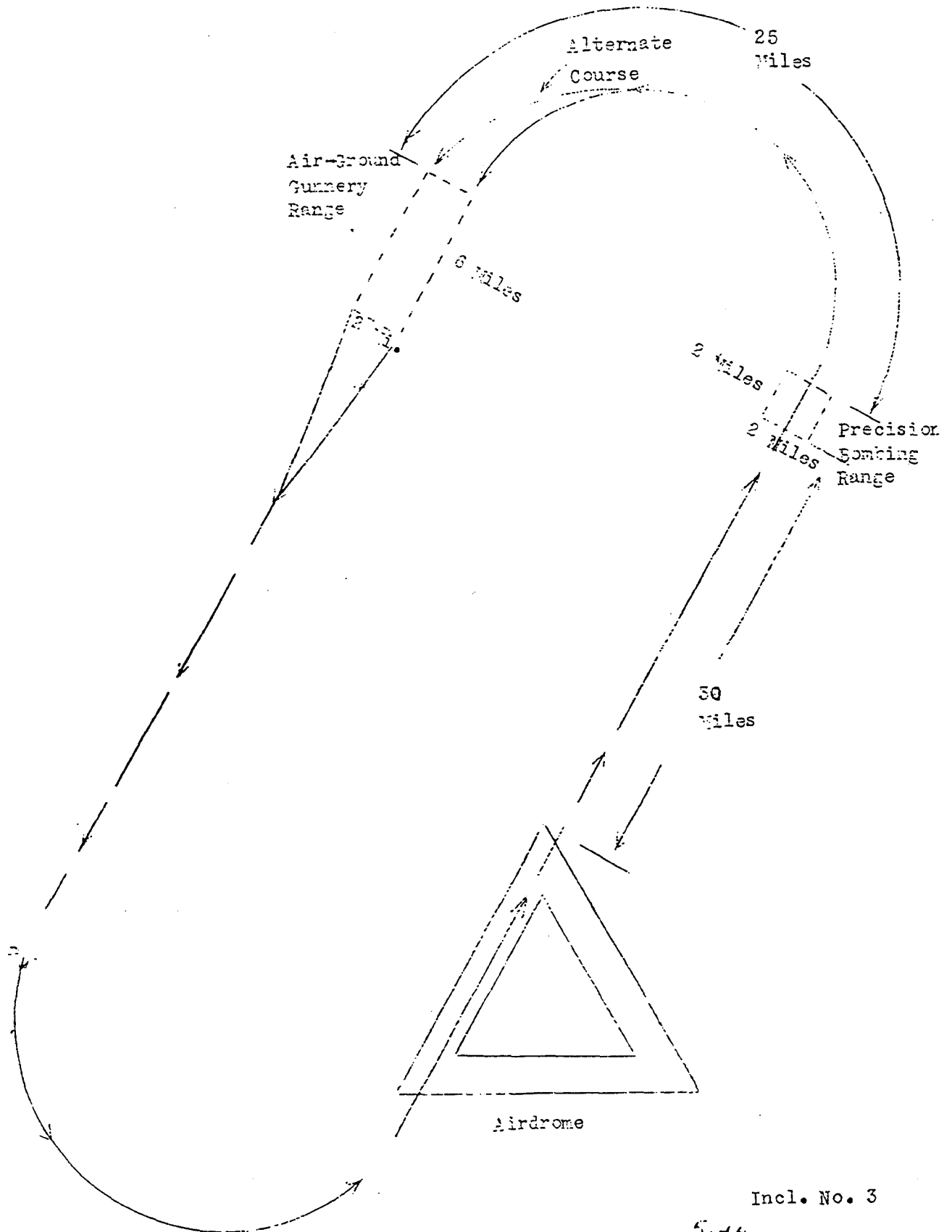


# AIR-GROUND GUNNERY TARGET



Incl. No. 2

LAYOUT PLAN  
PRECISION BOMBING AND AIR-GROUND GUNNERY RANGES



Incl. No. 3

6, 7, 8



**APPENDIX F**  
**REAL ESTATE DOCUMENTS**

**ORDNANCE AND EXPLOSIVES  
CHEMICAL WARFARE MATERIALS  
ARCHIVES SEARCH REPORT  
FINDINGS  
WATERTOWN AIR-TO-GROUND GUNNERY RANGE  
Marshall County, South Dakota**

**Project Number B08SD087201**

**APPENDIX F -- REAL ESTATE DOCUMENTS**

- F-1    Leased Property Inspection Report, dated 19 February 1945, Real Estate Officer, Corps of Engineers, Office of the Division Engineer, Missouri River Division.

CORPS OF ENGINEERS  
OFFICE OF THE DIVISION ENGINEER  
MISSOURI RIVER DIVISION

Control Approval Symbol SPEXL -6

Col. W.S. Dawson, C.O.

19 February 1945  
(Date of Inspection)

LEASED PROPERTY INSPECTION REPORT

1. Location: 50 Miles North of Watertown  
Marshall County, So. Dakota.
2. Description of area:  
7319 acres grazing land  
280 acres Government owned  
7039 acres leased.
3. Name of Lessor: (See reverse side)
4. Annual Rental: \$1919.58  
Government owned land cost \$12,000
5. Lease No. (See reverse side)
6. Date first occupied: 1-1-43
7. Using Agency: 2nd Air Force  
Sioux City Airbase.
8. Is space completely utilized? No.  
If not, give details (State location  
of unoccupied space, i.e. floors and  
square feet on each floor; floor load,  
if storage: number of regular and  
intermittent employees if office:  
attach explanation for nonoccupancy,  
if obtainable from Commanding Officer).
9. Present use and whether  
it conforms with purpose  
of lease:  
  
Not used. Original lease -  
ground gunnery range.
10. Are premises adapted to each purpose? Yes.
11. Is more suitable space available? If so, give details including moving cost:  
Yes.
12. If space is occupied by obsolete or inactive property, what arrangements can  
be made by C.O. for its removal or disposition? Not applicable.
13. Is Warehouse Package Plan or a Railroad Open Storage Yard adaptable for any  
stored materials? If so, state area that would be released thereby:  
Not applicable.
14. State conditions of building: None used.
15. Is lessor maintaining premises and furnishing services in accordance with  
terms of lease? None required.
16. State nature and cost of alterations and improvements and improvements, if any  
by Government: Tower cost \$2355.
17. General Remarks:

Originally named the Watertown Air-to-Ground Gunnery Range, now  
known as Sisseton Range.

This range has not been in use for sometime. Recommend a request  
be initiated declaring this installation surplus to the needs of the  
using agency.

(Over)

Inspector  
Olin F. Shannon  
THIS REPORT APPROVED:

W. D. Eng. Form No. 577  
(26 January 1944)

Lt. Col. R. Goddall, Jr.  
Lt. Col., Corps of Engineers  
Real Estate Officer

**APPENDIX G**  
**NEWSPAPERS / JOURNALS**  
**NOT USED**

## **APPENDIX H**

### **INTERVIEWS**

ORDNANCE AND EXPLOSIVES  
CHEMICAL WARFARE MATERIALS  
ARCHIVES SEARCH REPORT  
FINDINGS  
WATERTOWN AIR TO GROUND GUNNERY RANGE  
Marshall County, South Dakota

Project No. B08SD087201

APPENDIX H--INTERVIEWS

<u>Individual Contacted</u>	<u>Position/Organization</u>
LaVerne "Baldy" Batie	Curator Volunteer Museum of Wildlife Center & Industry West Highway 12 Webster, SD 57274 (605) 345-4751
Art Borgan	Land Owner Rural Route 1 Box 86 Dublin, SD 57270 (605) 738-2480
MSGT Christopher A. Corall	Chief, Explosive Ordnance Disposal Unit 28 CES/CED 840 White Street Ellsworth AFB, SD 57706 DSN 675-2873
Norma Johnson	Local Historian HC01, Box 62 Eden, SD 57232 (605) 698-7843 (home)
Wendy Lewis	Naturalist State Museum, Fort Sisseton RR 2, Box 94 Royal Lake State Park Lake City, SD 57247 (605) 448-5701

Michael C. Mullin

Director  
Watertown Regional Library  
611 B Avenue, N.E.  
Watertown, SD 57201-0250  
(605) 882-6226

68

Richard Popp

Chief Archivist  
Cultural Heritage Center  
South Dakota State Historical Society  
900 Governors Drive  
Pierre, SD 57501-2217  
(605) 773-3458

Michele Reid

Director of Public Services  
State of South Dakota  
Department of Education & Cultural Affairs  
South Dakota State Library  
800 Governors Drive  
Pierre, SD 57501-2294

Debbie Sundem

Extension Agent  
Day County Extension Office  
South Dakota State University  
P.O. Box 540, Courthouse  
Webster, SD 57274  
(605) 345-4641

Harry Thompson

Archivist  
Center for Western Studies  
Augustana College  
P.O. Box 727  
Sioux Falls, SD 57197  
(605) 336-4007

Dana R. Vaillancourt

Review & Compliance Coordinator  
State Historic Preservation Office  
South Dakota State Historical Society  
Cultural Heritage Center  
900 Governors Drive  
Pierre, SD 57501-2217  
(605) 773-3458

Michael J. Zuvanic

Commander  
74th Ordnance Company (EOD) (Provisional)  
52d Ordnance Group (EOD)  
Ft. Riley, KS 66442  
(913) 239-3313

### **Summaries of Pertinent Interviews:**

**Mr. LaVerne "Baldy" Batie** is a volunteer curator at the Museum of Wildlife Center & Industry, which according to Mr. Batie is a practice bomb. The tag on the practice bomb reads "sand filled" and "recovered by Alvin Block."

**Mr. Art Borgan**, a landowner, one mile North of Fort Sisseton, was born in 1927 and raised in the area. During World War II, he recalls B series bombers (4 engines) flying over the Watertown ATG Gunnery Range and dropping 500 pound practice bombs (poundage is hearsay) that burst with sand and black powder smoke on soft ground, which made depressions 4 to 5 feet deep. Mr. Borgan knows the locations of where the practice bombs hit. He also recalls seeing practice bombs in the "bomb-bay" which were released early before their intended target. Mr. Borgan says the targets were square and rectangular sheets of wood painted white on stilts in random order built in the middle of pasture land. The targets were later burned and scrap metal has long since been cleared mostly by farmers. Mr. Borgan referred us to Mr. James Monson, another landowner, who also has first-hand knowledge.

**Ms. Norma Johnson**, who is a local historian and part-time assistant at the Fort Sisseton Museum, had historical documentation on the Watertown ATG Gunnery Range, which she obtained through her own research efforts. The historical documentation consisted of duplicate copies of historical documentation the research team retrieved previously at the National Archives. Ms. Johnson also had a sketch map of the Watertown ATG, which she is still researching. She provided the research team a picture of the "practice bomb" on display at the Museum of Wildlife Center & Industry.

**Ms. Wendy Lewis**, Naturalist, State Museum, Fort Sisseton, thought the historic fort had been inadvertently struck by practice bombs by the Army Air Corps during target practice over the Watertown ATG Gunnery Range. Ms. Lewis provided the research team a number of potential interviewees for additional information on the Watertown ATG Gunnery Range.



**APPENDIX I**  
**PRESENT SITE PHOTOGRAPHS**

**ORDNANCE AND EXPLOSIVES  
CHEMICAL WARFARE MATERIALS  
ARCHIVES SEARCH REPORT  
FINDINGS  
WATERTOWN AIR-TO-GROUND GUNNERY RANGE  
Marshall County, South Dakota**

**Project Number B08SD087201**

**APPENDIX I -- PRESENT SITE PHOTOGRAPHS**

<b>PAGE</b>	<b>DESCRIPTION</b>
<b><u>Page I-1</u></b>	
<b>Photo #1</b>	View of Range looking north from southern boundary.
<b>Photo #2</b>	Range location where majority of practice bomb remnants have been found.
<b><u>Page I-2</u></b>	
<b>Photo #3</b>	Reported tower footing No. 1, located to the north.
<b>Photo #4</b>	Reported concrete tower footing No. 2, (center).
<b><u>Page I-3</u></b>	
<b>Photo #5</b>	Reported tower footing No. 3, located to the southeast.
<b>Photo #6</b>	View to the west showing inundation of site along road south of State Park.



**#1 View of Range looking north from southern boundary.**



**#2 Range location where majority of practice bomb remnants have been found.**



**#3** Reported tower footing No. 1, located to the north.



**#4** Reported concrete tower footing No. 2, (center).





**#5** Reported tower footing No. 3, located to the southeast.



**#6** View to the west showing inundation of site along road south of State Park.

**APPENDIX J**  
**HISTORICAL PHOTOGRAPHS**  
**NOT USED**

**APPENDIX K**  
**HISTORICAL MAPS / DRAWINGS**  
**NOT USED**

## **APPENDIX L**

### **SITE SAFETY AND HEALTH PLAN / SITE INSPECTION REPORT**



**ORDNANCE AND EXPLOSIVES  
CHEMICAL WARFARE MATERIALS  
ARCHIVES SEARCH REPORT  
FINDINGS  
WATERTOWN AIR-TO-GROUND GUNNERY RANGE  
Marshall County, South Dakota**

**Project Number B08SD087201**

**APPENDIX L**

**SITE SAFETY AND HEALTH PLAN/SITE INSPECTION REPORT**

Site Specific Safety and Health Plan for Watertown Air-to-Ground Gunnery Range, Marshall County, SD, July 1996.

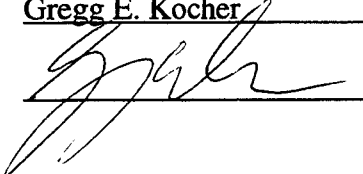
The Site Inspection Report is located in Section 6.0, ASR Findings and Section 2.4, ASR Conclusions and Recommendations.

**SITE SAFETY AND HEALTH PLAN (SSHP)**  
**for**  
**Watertown Air to Ground Gunnery Range**  
**Roberts County, South Dakota**  
**Site # B08SD087200**

The purpose of this site visit is to reconnoiter, document, and photograph areas on the former Watertown Air to Ground Gunnery Range, Roberts County, South Dakota suspected to be contaminated with unexploded ordnance and/or toxic chemical munitions.

SSHP PREPARED BY:	<u>George F. Sloan</u>
OFFICE	<u>USACE, CELMS-PM-M</u>
ADDRESS	<u>1222 Spruce St. St. Louis, Mo</u>
PHONE	<u>(314) 331-8796</u>
DATE PREPARED	<u>7-22-96</u>

SSHP REVIEWED/APPROVED BY: Gregg E. Kocher



NOTE: This SSHP is to be used only for non-intrusive site visits and must be approved by safety prior to the start of the field visit. All team members must read, and comply with the SSHP, and attend the safety briefings. The Site Safety and Health Officer (SSHO) shall ensure the Safety Briefing Checklist and the SSHP acceptance form (Appendix C) is filled out prior to the start of the site visit.

**A. SITE DESCRIPTION AND PREVIOUS INVESTIGATIONS**

**1. Site Description**

77

**a. Size:** Approximately 7,312 acres

**b. Present Usage**

(check all that apply)

<input type="checkbox"/> Military	<input type="checkbox"/> Recreational	<input type="checkbox"/> Other (specify)
<input type="checkbox"/> Residential	<input type="checkbox"/> Commercial	<input type="checkbox"/> _____
<input checked="" type="checkbox"/> Natural Area	<input type="checkbox"/> Industrial	<input type="checkbox"/> _____
<input checked="" type="checkbox"/> Agricultural	<input type="checkbox"/> Landfill	<input type="checkbox"/> _____

<input type="checkbox"/> Secured	<input type="checkbox"/> Active	<input type="checkbox"/> Unknown
<input checked="" type="checkbox"/> Unsecured	<input type="checkbox"/> Inactive	

**2. Past Uses:** In 1944, the United States Government acquired this property as an Air to Ground Gunnery Range in support of Watertown Satellite Air Field, South Dakota. The property was declared surplus in 1946.

**3. Surrounding Population** (check all that apply)

<input checked="" type="checkbox"/> Rural	<input checked="" type="checkbox"/> Residential	<input type="checkbox"/> Other (specify)
<input type="checkbox"/> Urban	<input type="checkbox"/> Industrial	_____
<input type="checkbox"/> Commercial		_____

**4. Previous Sampling/Investigation Results**

**a. Ordnance/Explosives (OE) Encountered:** Information obtained through archival research indicates the following ordnance and explosives may be present on this site.

- Bombs, HE
- Practice Bombs
- Small Arms

**b. Samples (Air, Water, Soil, Vegetation)**

☒ No samples are available.  
☐ Samples available

Chemical	Concentration	Media	Location
----------	---------------	-------	----------

**B. DESCRIPTION OF ON-SITE ACTIVITIES**  
(check all that apply)

☒ Walk-through    ☒ Drive-through    ☐ Other (specify)  
☒ On-Road        ☒ Off road        ☐ \_\_\_\_\_  
☒ On Path        ☒ Off path        ☐ \_\_\_\_\_

### C. SITE PERSONNEL AND RESPONSIBILITIES

#### 1. Responsibilities

**a. Project Manager:** The Corps of Engineers Project Manager (PM) is overall responsible for the site visit. He will assign a Team Leader, (most situation will be the PM). The PM will ensure that the SSHP is completed. Coordinates and executes the site visit.

**b. Site Safety and Health Officer:** Individual designated to conduct safety, enforce the SSHP, conduct safety briefings, and ensure that the team leader can safely fulfill his objectives. The SSHO will maintain the safety gear, and monitor on-site operations. The SSHO is responsible for identifying, marking, and reporting any unexploded ordnance and explosives.

#### 2. Team Members

Name	Position	Address	Phone
<u>Dennis W. Gilmore</u>	<u>PM/Team Leader</u>	<u>USACE, St. Louis, Mo</u>	<u>(314) 331-8108</u>
<u>Randy Fraser</u>	<u>SSHO, UXO Spec</u>	<u>USACE, St. Louis, Mo</u>	<u>(314) 331-8268</u>
<u>Frederick Miller</u>	<u>Historian</u>	<u>USACE, St. Louis, Mo</u>	<u>(314) 331-8792</u>

### D. OVERALL HAZARD EVALUATION:

☐ High    ☐ Moderate    ☒ Low    ☐ Unknown

This assessment was developed using the Site Investigation Hazard Analysis and Risk Assessment Code Matrix.

**E. GENERAL PRECAUTIONS:** Prior to the on-site visit, all team members are required to read this SSHP and sign the form acknowledging that they have read and will comply with it. In addition, the SSHO shall hold a brief tailgate meeting in which site specific topics regarding the days activities will be discussed. If unanticipated hazardous conditions arise, team members are to stop work, leave the immediate area and notify the SSHO. The buddy system will be enforced at all times.

### F. STANDARD OPERATION SAFETY PROCEDURES, ENGINEERING CONTROLS AND WORK PRACTICES

**1. Site Rules/Prohibitions:** At any sign of unanticipated hazardous conditions, stop tasks, leave the immediate area and notify the SSHO. Smoking, eating and drinking allowed in designated areas only.

**2. Material Handling Procedures:** Do not handle.

**3. Drum Handling Procedures:** Do not handle.

**4. Confined Space Entry:** A area identified as a Permit Required Confined space will not be entered. All confined spaces shall be considered permit required confined spaces until the pre-entry procedures demonstrate otherwise. Confined spaces may be entered without a written permit or attendant provided the space is determined not to be a permit required confined space as specified in 29 CFR 1910.146.

**5. Electrical Protection:** Overhead power lines, downed electrical wires and buried cables pose a danger of shock and electrocution. In addition, buildings may contain exposed wiring that may hold a potential load. Workers should avoid contact with any and all exposed wire and cables

**6. Spill Containment:** N/A

**7. Excavation Safety:** Do not enter trenches/excavations.

**8. Illumination:** Site visits will be conducted during daylight hours only.

**9. Sanitation:** Use existing sanitary facilities.

**10. Buddy System:** Individuals will maintain constant contact with other personnel at all times. No one will work alone at any time during the site visit.

**11. Engineering Controls:** N/A

**12. Insects:** Wearing light colored clothing and tucking in the pant legs can reduce contact. In severely infested area it may be necessary to tape all openings. Apply repellents to both clothing and bare skin. Diethyltoluamide (DEET) is an active ingredient in many repellents, which are effective against ticks and other insects. Repellents containing DEET can be applied on exposed areas of skin and clothing. However, repellents containing permethrin should be used on only clothing. For more information on insect bites, refer to Appendix B.

**13. Poisonous Vegetation:** Recognition and avoidance is the best protection. Cover all exposed skin. If it is known or suspected that an individual has been exposed, wash the effected area with soapy water.

**14. Inclement Weather:** When there are warnings or indications of impending severe weather (heavy rains, strong winds, lightning, tornados, etc.), weather conditions shall be monitored and appropriate precautions taken to protect personnel and property from the effects of the severe weather.

**15. Hot Weather:** In hot environments, cool drinking water shall be made available and workers shall be encouraged to frequently drink small amounts, e.g., one cup every 15 - 20 minutes: the water shall be kept reasonably cool. In those situations where heat stress may impact worker safety and health, work regimens shall be established. Environmental monitoring of the Wet Bulb Globe Temperature Index shall be conducted and work loads and work regimens categorized as specified in the American Conference of Governmental Industrial Hygienist (ACGIH) publication "Threshold Limit Values and Biological Exposure Indices". For more information on Heat Stress refer to Appendix A of this SSHP.

**16. Cold Weather:** Cold injury (frost bite and hypothermia) and impaired ability to work are dangers at low temperatures and when the wind-chill factor is low. To guard against them: wear appropriate clothing; have warm shelter readily available; carefully schedule work and rest periods, and monitor workers' physical conditions.

**17. Off-Road Driving:** Ensure all emergency equipment is available with the vehicle i.e. tire changing equipment. Drivers shall familiarize themselves with the procedures for engaging four-wheel drive systems before the need for added traction arises. Vehicles will not be driven into an environment that is unknown, such as deep water, or an unstable surface. Vehicles will not be driven into a suspected ordnance impact area.

**18. Ordnance:**

**a. General Information**

(1) The cardinal principle to be observed involving explosives, ammunition, severe fire hazards or toxic materials is to limit the exposure to a minimum number of personnel, for the *minimum amount of time*, to a *minimum amount of hazardous material* consistent with a safe and efficient operation.

(2) The age or condition of an ordnance item does not decrease the effectiveness. Ordnance that has been exposed to the elements for extended periods of time become more sensitive to shock, movement, and friction, because the stability agent in the explosives may be degraded.

(3) When chemical agents may be present, further precautions are necessary. If the munitions item has green markings leave the area immediately, since it may contain a chemical filler.

(4) Consider ordnance that has been exposed to fire as extremely hazardous. Chemical and physical changes may have occurred to the contents which render it more sensitive than it was in its original state.

81

#### **b. On-Site Instructions**

(1) DO NOT TOUCH or MOVE any ordnance items regardless of the markings or apparent condition.

(2) DO NOT conduct a site visit during an electrical storm or an approaching electrical storm. If a storm approaches during the site visit leave the site immediately and seek shelter.

(3) DO NOT use a radio or cellular phone in the vicinity of a suspect ordnance item.

(4) DO NOT walk across an area where the ground cannot be seen.

(5) DO NOT drive a vehicle into a suspected OE area; use clearly marked lanes.

(6) DO NOT carry matches, cigarettes, lighters or other flame producing devices into a OE site.

(7) DO NOT rely on color code for positive identification of ordnance items or their contents.

(8) Approach ordnance items from the side; avoid approaching from the front or rear.

(9) Always assume ordnance items contain a live charge until it can be determined otherwise.

(10) Dead vegetation and animals may indicate potential chemical contamination. If a suspect area is encountered, personnel should leave the immediate area and evaluate the situation before continuing the site visit.

#### **c. Specific Action Upon Locating Ordnance**

(1) DO NOT touch, move or jar any ordnance item, regardless of its apparent condition.

(2) DO NOT be misled by markings on the ordnance item stating "practice", "dummy", or "inert". Practice munitions may contain an explosive charge used for spotting the

point of impact. The item may also be mismarked.

82

(3) DO NOT roll the item over or scrape the item to read the markings.

(4) The location of any ordnance items found during site investigations should be clearly marked so it can be easily located and avoided.

(5) Reporting will be conducted in accordance with CELMS-PM-M, Standard Operating procedure for Reporting Ordnance and Unexploded Ordnance (UXO), dated 19 January 1995.

19. Other: (specify)

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#### G. SITE CONTROL AND COMMUNICATIONS

1. Site Map: Refer to Appendix A

2. Site Work Zones: N/A

3. Buddy System: Individuals will maintain constant contact with other personnel at all times. No one will work alone at any time during the site visit.

#### 4. Communications

a. On-Site: Verbal communications will be used among team members.

b. Off-Site: Communications shall be established on every site. Communications may be established by using an cellular phone or by public or private phone which may be readily accessible. (specify below)

☒ Cellular phone

☐ Public/private phone (location \_\_\_\_\_)

☐ Other \_\_\_\_\_

c. Emergency Signals: In the case of small groups, a verbal signal for emergencies will suffice. An emergency signal for large groups (i.e. air horn, whistle) should be incorporated at the discretion of the SSHO.

☒ Verbal



[ ] Nonverbal (specify)\_\_\_\_\_

**H. EMERGENCY RESPONSE:** Team members are to be alert to the dangers associated with the site at all times. If an unanticipated hazardous condition arises, stop work, evacuate the immediate area and notify the SSHO. A First Aid Kit and emergency eye wash (if applicable) will be located in the SSHO's field vehicle. If qualified persons (i.e. fire department, medical facility or physician) are not accessible within five minutes of the site at least two team members shall be qualified to administer first aid and CPR.

**1. Emergency/Important Telephone Numbers**

Roberts County Sheriff's Office: ..... (605) 698-7667

Hospital: ..... (605) 698-7647

Huntsville Safety Office: ..... (205) 895-1582/1579

Huntsville's 24 hour number: ..... (800) 627-3532, PIN 777-2534

On-site cellular phone ..... 

St Louis Corps of Engineers ..... (314) 331-8036

**2. Hospital/Medical Facility Information**

Name: Coteau Des Prairies Hospital  
Address: 205 Orchard Drive  
Sisseton, SD  
Phone: (605) 698-7647

Distance to hospital Approx. 6 miles

Route to Hospital refer to the site map

## **I. MONITORING EQUIPMENT AND PROCEDURES**

**1. Exposure Monitoring:** For non-intrusive on-site activities such as site visits, air monitoring is typically not required. However, if the site situation dictates the need for monitoring, complete the following information on a separate page and attach the page to the SSHP.

**a. Monitoring Equipment To Be Utilized:** N/A

**b. Equipment Calibration Results:** N/A

**c. Action Levels:** N/A

### **2. Heat/ Cold Stress Monitoring**

**a.** Heat Stress monitoring criteria published in Chapter 8 of the NIOSH/OSHA/USCG/EPA "Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities" shall be followed.

**b.** Cold Stress monitoring shall be conducted in accordance with the most current published American Conference of Governmental Industrial Hygienists (ACGIH) cold stress standard..

**J. PERSONAL PROTECTIVE EQUIPMENT:** Typically, for non-intrusive site visits, Level D is required. If a higher level of protection is to be used initially or as contingency, a brief discussion will be attached. At a minimum personnel shall wear clothing suitable for the weather and work condition. The minimum for field work shall be short sleeve shirt, long trousers, and leather or other protective work shoes or boots. If a higher level of protection is to be used initially or as contingency, a brief discussion will be attached.

**1. Footwear:** Footwear providing protection against puncture shall meet the applicable requirements as stated in EM 385-1-1, paragraph 05.A.07. All activities which personnel are potentially exposed to foot hazards will be identified and documented in a hazard analysis.

**2. Hand Protection:** Persons involved in activities which subject the hands to injury (e.g., cuts, abrasions, punctures, burns) shall use leather gloves.

**3. Head Protection:** Hardhats shall be worn when personnel are subject to potential head injury. The identification and analysis of head hazards will be documented in a hazard analysis.

**4. Eye Protection:** Personnel will wear eye protection when activities present potential injuries to the eyes. All eye protection equipment shall meet the requirements as stated in EM 385-1-1, paragraph 05.B.

**K. DECONTAMINATION PROCEDURES:** Decontamination procedures are not anticipated for this site investigation. Team members are cautioned not to walk, kneel or sit on any surface with potential leaks, spills or contamination.

**L. TRAINING:** All site personnel shall have completed the training required by EM 385-1-1 and 29 CFR 1910.120 (e). The U.S. Army Corps of Engineer (USACE) Project Manager shall ensure, and the SSHO shall verify, that all on-site personnel have completed appropriate training. Additionally, the SSHO shall inform personnel before entering, of any potential site-specific hazards and procedures.

**M. MEDICAL SURVEILLANCE PROGRAM:** The USACE Project Manager shall ensure, and the SSHO shall verify, that all on-site personnel are on the Medical Surveillance Program meeting the requirements of 29 CFR 1910.120, and ANZI Z-88.2, as appropriate, depending on the PPE and site specific tasks.

Provide the following information on Training and Medical

NAME	HAZWOPER DATE	PROVIDER	MEDICAL DATE
<u>Dennis W. Gilmore</u>	<u>12-95</u>	<u>Corps of Engineers</u>	<u>12-95</u>
<u>Randy Fraser</u>	<u>1-96</u>	<u>Corps of Engineers</u>	<u>4-96</u>
<u>Frederick Miller</u>	<u>9-95</u>	<u>Corps of Engineers</u>	<u>8-95</u>
_____	_____	_____	_____

**N. LOGS, REPORTS AND RECORDKEEPING:** Site logs are maintained by the Project Manager and SSHO. This is to include historical data, personnel authorized to visit the site, all records, standard operating procedures, air monitoring logs and the SSHP.

**O. GENERAL:** The number of personnel visiting the site shall be a limited to a minimum of two, maximum of eight. The more personnel on-site, the greater potential for an accident. The SSHO may modify this SSHP if site conditions warrant it and without risking the safety and health of the team members. This modification will be coordinated with the team members. The SSHO shall notify Corps of Engineers Safety Office in Huntsville, AL. of the change as the situation allows.

## APPENDIX A

### HEAT- RELATED INJURIES

Once the signals of a heat-related illness begin to appear, the victim's condition can quickly get worse. A heat related illness can result in death. If you see any of the signals of sudden illness, and the victim has been exposed to extremes of heat, suspect a heat-related illness.

People at risk for heat-related illness include those who work or exercise outdoors, elderly people, young children, and people with health problems. Also at risk are those who have had a heat-related illness in the past, those with medical conditions that cause poor blood circulation, and those who take medications to get rid of water from the body (diuretics).

People usually try to get out of extreme heat before they begin to feel ill. However, some people do not or can not. Those that work outdoors often keep working even after they begin to feel ill. Many times, they might not even recognize that they are in danger of becoming ill.

Heat cramps, heat exhaustion, and heat stroke are conditions caused by overexposure to heat. You can help prevent heat-stress emergencies by recognizing and properly treating symptoms. Below is a quick reference guide to heat-related emergencies:

**HEAT CRAMPS:** Heat cramps are the least severe, and often are the first signals that the body is having trouble with the heat. *Symptoms* include: Muscle twitching; painful spasms in the legs, arms or abdomen.

#### WHAT TO DO:

- Have the individual rest in a cool place.
- Give cool water or a commercial sports drink.
- lightly stretch the muscle and gently massage the area.

**HEAT EXHAUSTION:** Heat exhaustion is a more severe condition than heat cramps. *Symptoms* include: cool, moist, pale, or flushed skin, headache, nausea, dizziness, weakness, and exhaustion.

**HEAT STROKE:** Heat stroke is the least common but most severe heat emergency. It most often occurs when people ignore the signals of heat exhaustion. Heat stroke develops when the body systems are overwhelmed by heat and begin to stop functioning. **Heat stroke is a serious medical emergency.** *Symptoms* include: red, hot, dry skin; changes in consciousness; rapid, weak pulse; and rapid, shallow breathing.

**WHAT TO DO:** When you recognize a heat-related illness in its early stages, you can usually reverse it.

- Get the victim out of the heat.
- Loosen any tight clothing and apply cool, wet cloths, such as towels or sheets.
- If the victim is conscious, give cool water to drink. Do not let the conscious victim drink too quickly. Give about 1 glass (4 ounces) of water every 15 minutes.
- Let the victim rest in a comfortable position, and watch carefully for changes in his or her condition. The victim should not resume normal activities the same day.
- **Refusing water, vomiting, and changes in consciousness mean that the victim's condition is getting worse. Call for an ambulance immediately if you have not already done so.**
- If the victim vomits, stop giving fluids and position them on their side.
- Watch for signals of breathing problems.
- Keep the victim lying down and continue to cool the body any way you can. If you have ice packs or cold packs, place them on each of the victim's wrists and ankles, on the groin, in each armpit, and on the neck to cool the large blood vessels.

## APPENDIX B

### BITES AND STINGS

89

#### Scorpions, Bees and Spiders

Bee stings are painful, but rarely fatal. Some people, however have a severe allergic reaction to an insect sting. This allergic reaction may result in a breathing emergency. If someone is stung by an insect, remove the stinger. Scrape it away with from the skin with your fingernail or plastic card, such as a credit card, or use tweezers. If you use the tweezers, grasp the stinger, not the venom sac. Wash the site with soap and water. Cover it to keep it clean. Apply a cold pack to the area to reduce the pain and swelling. Watch the victim for signals of an allergic reaction.

Scorpions live in dry regions of the southwestern United States and Mexico. They live under rocks, logs, and the bark of certain trees and are most active at night. Only a few species of scorpions have a sting that can cause death.

Spiders; there are also only two spiders in the United States whose bite can make you seriously sick or be fatal. These are the black widow spider and the brown recluse. The black widow is black with a reddish hourglass shape on the underside of its body. The brown recluse is light brown with a darker brown, violin-shaped marking on the top of its body. Both spiders prefer dark, out of the way places. Often, the victim will not know that he or she has been bitten until he or she starts to feel ill or notices a bite mark or swelling.

*Symptoms* include nausea and vomiting, difficulty breathing or swallowing, sweating and salivating much more than normal, severe pain in the sting or bite area, a mark indicating a possible bite or sting, and swelling of the area.

*First Aid:* If someone has been stung by a scorpion or bitten by a spider he or she thinks is a black widow or brown recluse, wash the wound, apply a cold pack to the site, and get medical help immediately.

#### Lyme Disease

Lyme Disease is an illness that people get from the bite of an infected tick. Lyme disease is affecting a growing number of people in the United States. Everyone should take precautions against it. Not all ticks carry lyme disease. Lyme disease is spread mainly by a type of tick that commonly attaches itself to field mice and deer. It is sometimes called a deer tick. This tick is found around beaches and in wooded and grassy areas. like all ticks, it attaches itself to any warm-blooded animal that brushes by. Deer ticks are very tiny and difficult to see. They are much smaller than the common dog tick or wood tick. They can be as small as a poppy

seed or the head of a pin. Adult deer ticks are only as large as a grape seed.

*Symptoms:* The first signal of infection may appear a few days or a few weeks after a tick bite. Typically, a rash starts as a small red area at the site of the bite. It may spread up to 7 inches across. In fair-skinned people the center is lighter in color and the outer edges are red and raised. This sometimes gives the rash a bull's-eye appearance. In dark skinned people the area may look black and blue, like a bruise.

Other symptoms include fever, headache, weakness, and joint and muscle pain similar to the pain of "flu". These symptoms might develop slowly and might not occur at the same time as a rash. In fact you can have lyme disease without developing a rash.

*First Aid:* If you find a tick, remove it by pulling steadily and firmly. Grasp the tick with fine-tipped tweezers, as close to the skin as possible, and pull slowly. If you do not have tweezers, use glove, plastic wrap, or a piece of paper to protect you finger. If you use your bare fingers, wash your hands immediately. Do not try to burn a tick or use other home remedies, like coating the tick with Vaseline or nail polish or picking it with a pin. Once the tick is removed, wash the area with soap and water. If available, apply antiseptic or antibiotic ointment. If you can not remove the tick or parts of the tick stay in your skin, obtain medical care. If a rash or flu like symptoms develop, seek medical attention.



**SSHP ACCEPTANCE FORM**  
**ABBREVIATED SITE SAFETY AND HEALTH PLAN**  
**FOR**  
**Watertown PBR,**  
**Marshall County, SD**

NAME	OFFICE	SIGNATURE	DATE
<u>Fredrick T. Miller</u>	<u>CELMS-PD-A</u>	<u>Fredrick T. Miller</u>	<u>7/22/96</u>
<u>Dennis W. Gilmore</u>	<u>CELMS-PM-M</u>	<u>[Signature]</u>	<u>7/23/96</u>
<u>RANDY FRASER</u>	<u>CELMS-PM-M</u>	<u>[Signature]</u>	<u>7/29/96</u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>

**SITE SURVEY SAFETY BRIEFING**

(Check subjects discussed)

Date 8/1/96**GENERAL INFORMATION**

- ☒ Purpose of Visit
- ☒ Identify Key Site Personnel

**SITE SPECIFIC INFORMATION**

- ☒ Site Description/Past Use
- ☒ Results of Previous studies
- ☒ Potential Site Hazards
- ☒ OE Safety Procedures
- ☒ Site SOP
- ☒ Site Control and Communications
- ☒ Emergency Response
- ☒ Location of First aid Kit
- ☒ Emergency Phone Numbers
- ☒ Map to Facility
- ☒ PPE
- ☒ Weather Precautions *None*
- ☒ Cold/Heat *Sunny 80's*
- ☒ Severe Weather

**Safety Briefing Attendance**

All team members and any accompanying personnel will be briefed and sign this form:

**NAME (Print)****ORGANIZATION****SIGNATURE**Dennis W. GilmoreUSACE-STL, Project ManagerRandy FraserUSACE-STL, Safety SpecialistFrederick MillerUSACE- STL Historian

*[Signature]*

*[Signature]*

*[Signature]*

**APPENDIX M**  
**REPORT DISTRIBUTION LIST**

ORDNANCE AND EXPLOSIVES  
CHEMICAL WARFARE MATERIALS  
ARCHIVES SEARCH REPORT  
FINDINGS  
WATERTOWN AIR-TO-GROUND GUNNERY RANGE  
Marshall County, South Dakota

Project Number B08SD087201

APPENDIX M -- REPORT DISTRIBUTION LIST

<u>Addressee</u>	<u>No. Copies</u>
Commander, U.S. Army Engineering Support Center Huntsville, ATTN: CEHNC-OE-PM P.O. Box 1600 Huntsville, Alabama 35807-4301	2
Project Manager Chemical Demilitarization, Non-Stockpile ATTN: SFAE-CD-NM Aberdeen Proving Ground, Maryland 21010-5401	1
Commander, U.S. Army Chemical & Biological Defense Command ATTN: AMSCB-CIH, Bldg E5183 Aberdeen Proving Ground, Maryland 21010-5423	1
U.S. Army Technical Center for Explosives Safety ATTN: SMCAC-ESM Savannah, IL 61074-9639	1
Commander, U.S. Army Engineer District, Omaha ATTN: CEMRO-ED-EC 215 North 17th Street Omaha, NE 68102-4978	3

## **REPORT PLATES**

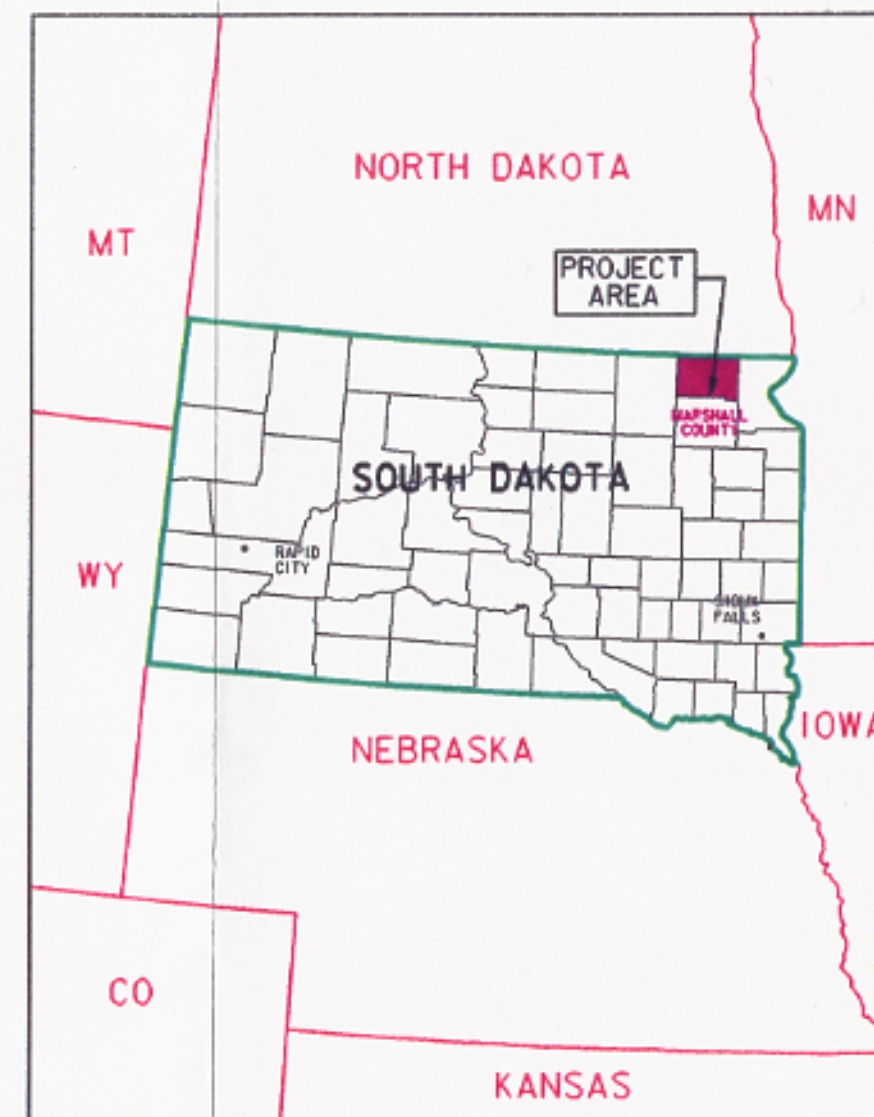
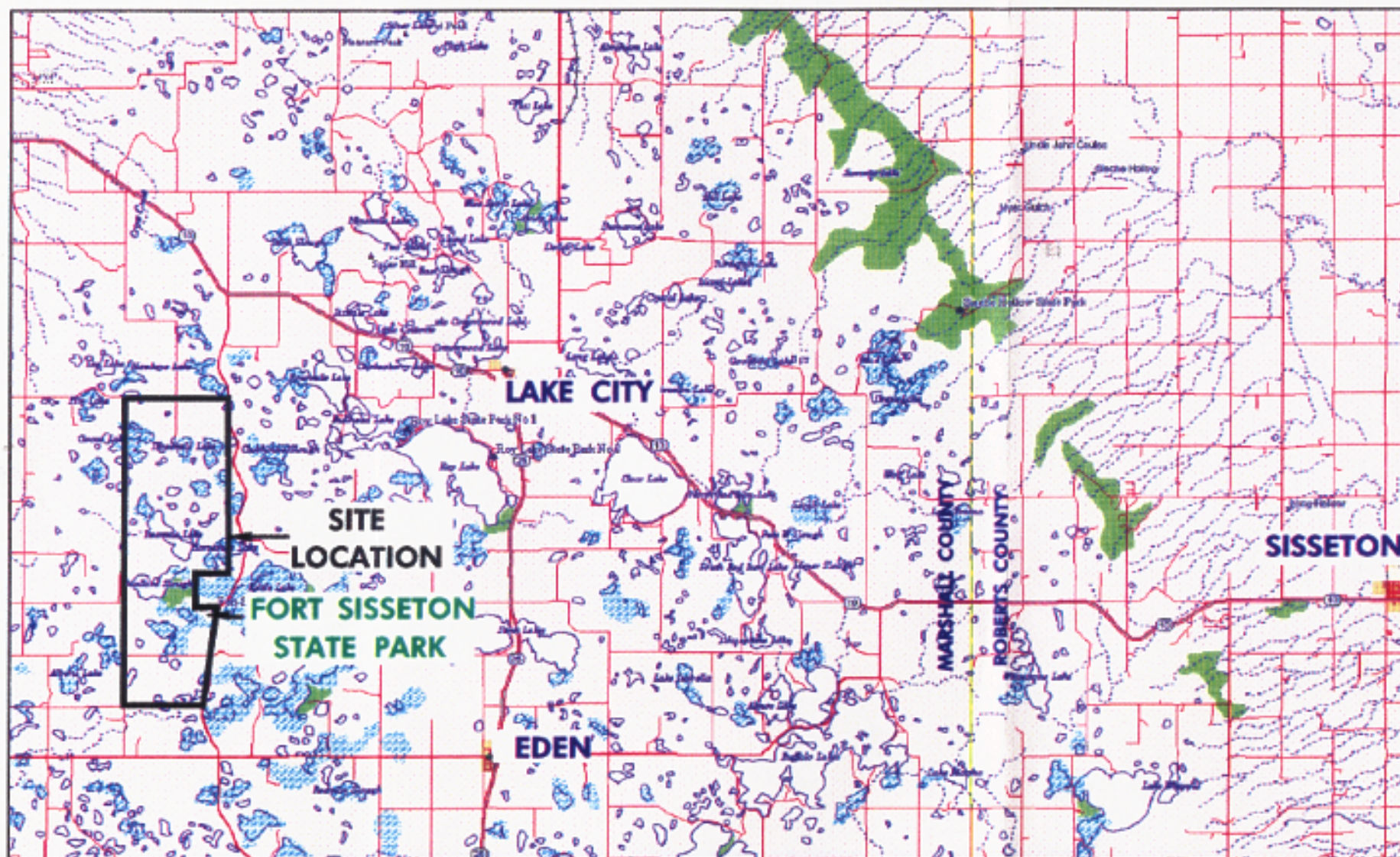
**ORDNANCE AND EXPLOSIVES  
CHEMICAL WARFARE MATERIALS  
ARCHIVES SEARCH REPORT  
FINDINGS  
WATERTOWN AIR-TO-GROUND GUNNERY RANGE  
Marshall County, South Dakota**

**Project Number B08SD087201**

**REPORT PLATES**

Plate 1	Vicinity Map
Plate 2	Site Map
Plate 3	Findings
Plate 4	Aerial Photo - 1953





# LEGEND

 SITE LOCATION



NOT TO SCALE

## PLATE I

WATERTOWN AIR TO GROUND  
 GUNNERY RANGE  
 MARSHALL COUNTY, SOUTH DAKOTA  
 DERP-FUDS\* B08SD087201  
 VICINITY MAP

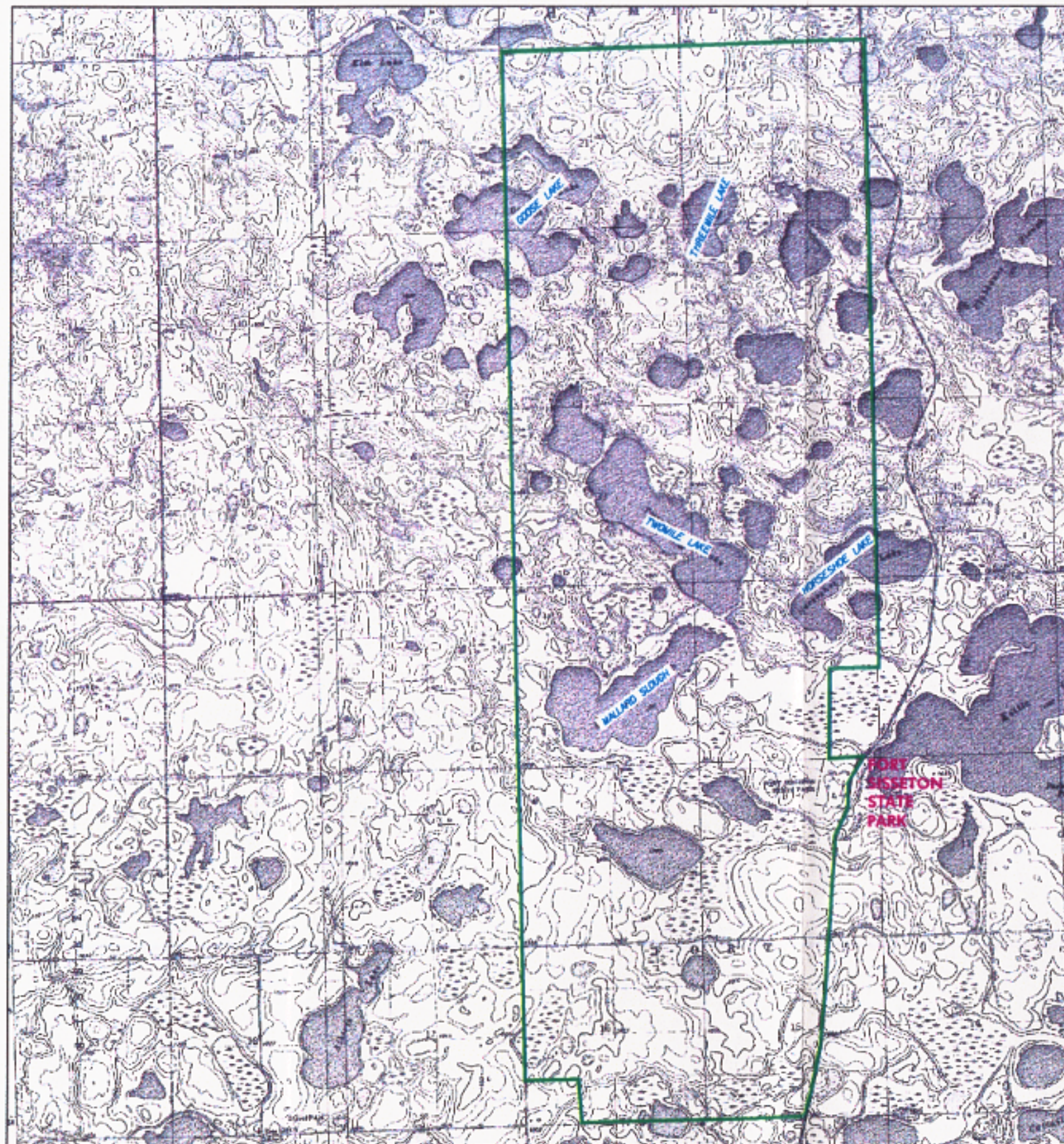
PROJ. DATE: APR. 1996

DATE OF MAP: 1995

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# LEGEND

SITE LOCATION

0 3500 7000

APPROXIMATE SCALE IN FEET



**WATERTOWN AIR TO GROUND  
GUNNERY RANGE  
MARSHALL COUNTY, SOUTH DAKOTA  
DERP-FUDS\* B08SD087201  
SITE MAP**

PROJ. DATE: APR. 1996

DATE OF QUAD: 1970

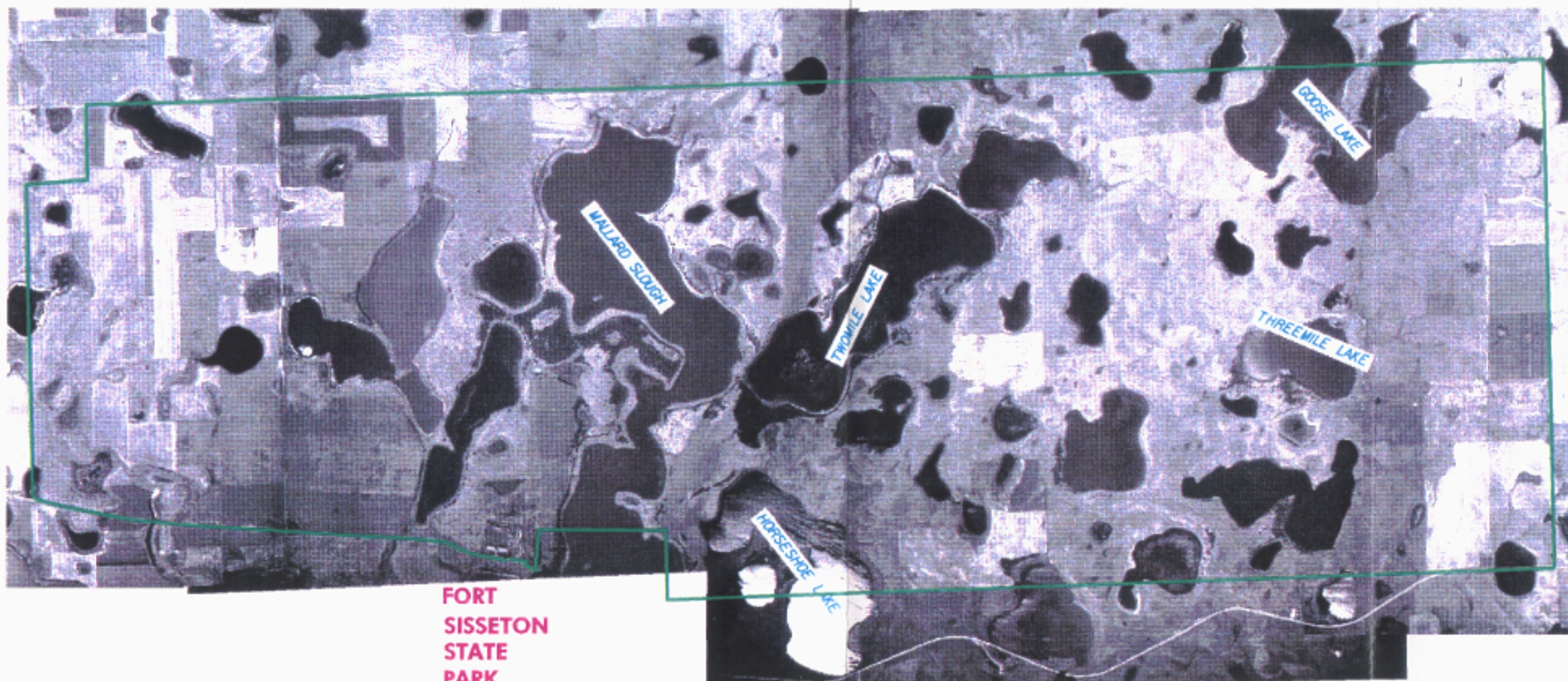
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**FORT  
SISSETON  
STATE  
PARK**



LEGEND

- FEATURE LOCATION
- SITE LOCATION

0 2500 5000  
APPROXIMATE SCALE IN FEET

**PLATE 4**

**WATERTOWN AIR TO GROUND  
GUNNERY RANGE  
MARSHALL COUNTY, SOUTH DAKOTA  
DERP-FUDS\* B08SD087201  
1953 AERIAL PHOTO**

PROJ. DATE: APR. 1996	DATE OF PHOTO: 1953
03-SEP-1996 12:01	N:\OEN\CD-GI-1\PHOTO\WATRO5300.DGN-EXT